THE
CAVALRY JOURNAL

F. Remington.

LIBRARY

DEPARTMENT
LIBRARY

JULY-AUGUST, 1940

Have You Read These Recent Books?

Art of Modern Warfare, by Hermann Foertsch, Colonel of the German General Staff, translated by Theodore W. Knauth. A summation of the principles of modern *blitzkrieg* and the tactical and strategical tenets governing the German Army of today. . **$2.75**

Decisive Battles, by Major General J. F. C. Fuller, British Army. This American edition contains the full content of the original English publication. 1,030 pages. A skilful analysis of each of thirty-seven battles and campaigns that changed the course of history **$4.50**

Maneuver in War, by Lieutenant Colonel Charles A. Willoughby. A study of maneuver in war indicating the sound application of basic principles and a proper regard for the logistics of battle **$3.00**

Riot Control by the National Guard, by Major Sterling A. Wood. A book that enables advance preparation for the efficient performance of riot duty from the viewpoint of platoon, company, and battalion or squadron commanders suddenly pitted against a mob. (Fabcote binding, $1.50.) Full Buckram binding **$2.00**

Roman Eagles Over Ethiopia, by Colonel P. A. del Valle, U.S.M.C. First-hand testimony by an *eye-witness* of this extraordinary enterprise. . . . An account of the various handicaps of terrain and climate . . . troubles with supply . . . devices used in mechanization . . . the final onslaught in the Badoglio victories. An invaluable book at this time **$2.50**

Roots of Strategy, by Major Thomas R. Phillips. A compilation of swift, laconic truths from military masters including the crystallizing Maxims of Napoleon (now out of print and unobtainable in other editions). . . . An unassailable foundation for military reasoning, leadership, and guidance **$2.00**

Technique of Modern Arms, by Colonel Hollis LeR. Muller. A book "to assist both the junior officer who is preparing for service or extension schools, and the senior officer whose purpose it is to refresh his mind on bare essentials of the science of war." A most useful book, particularly for members of the two civilian components of the army and for junior officers **$2.50**

The German Army, by Herbert Rosinski. An invaluable analysis of the factors that make the German Army what it is **$3.00**

War on Wheels, by Captain Charles R. Kutz. A history of the course of *wheels* in warfare tracing the rise and oncoming threat of motors—the thrusts of scout and combat cars, tanks, and other vehicles. . . . A whole background of the use of armored ships on the battlefield giving an intelligent answer to vital questions about mechanization **$2.00**

See Page 378 for Other Books of Timely Interest.

10% Discount on Orders Amounting to $10.00 or More

Order Through

THE CAVALRY JOURNAL

1624 H Street, N.W.
WASHINGTON, D. C.

United States Cavalry Association

Organized November 9, 1885

The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and the solidarity of the Cavalry of the Army of the United States.—Article III of the Constitution.

OFFICERS

MAJOR GENERAL JOHN K. HERR
CHIEF OF CAVALRY
President

BRIG. GEN. H. S. HAWKINS
RETIRED
Vice-President

MAJOR FENTON S. JACOBS
CAVALRY
Secretary-Treasurer

EXECUTIVE COUNCIL

BRIG. GEN. LEWIS B. BALLANTYNE, 59th Cavalry Brigade
COL. BRUCE PALMER, Cavalry
COL. GEORGE S. PATTON, JR., Cavalry
COL. GEORGE H. CHERRINGTON, 308th Cav-Res.
COL. KENNETH BUCHANAN, 106th Cav.
COL. KARL S. BRADFORD, Cavalry
LT. COL. WM. M. GRIMES (Cav.), G.S.
LT. COL. GEOFFREY KEYES (Cav.), G.S.
LT. COL. HERBERT H. FROST, 302d Cav.

The Cavalry Journal is published under the auspices of the United States Cavalry Association. It is not an official publication. Articles appearing in the *Journal* represent the personal views of the author and are published to stimulate interest in, provoke thought on, and provide a free forum for the decorous discussion of cavalry affairs. In no wise do contributions appearing in the *Journal* reflect official thought or indorsement.

The Cavalry Journal

PUBLISHED BI-MONTHLY BY
THE UNITED STATES CAVALRY ASSOCIATION
MAJOR FENTON S. JACOBS, CAVALRY, EDITOR

VOLUME XLIX NUMBER 4

CONTENTS

JULY-AUGUST, 1940

CENSORSHIP? 290
By Brigadier General Henry J. Reilly

POWER PLUS SPEED 296
By Captain Herbert W. Ehrgott

THE NEW GERMAN ARMY 307
By Lieutenant Colonel A. T. McAnsh

CAVALRY CLARIFIED 315

EXPERIENCES IN THE POLISH CAMPAIGN 316

THE 7TH CAVALRY BRIGADE IN THE THIRD ARMY MANEUVERS 318

EDITORIAL COMMENT 320

NOTES FROM THE CHIEF OF CAVALRY 322

TRAINING MEMORANDA TO HIS REGIMENT 324
By Colonel George S. Patton, Jr.

WHO'S WHO? 326
By Major Wendell G. Johnson

THE CAVALRY SCHOOL 331

THE INVISIBLE WEAPON 332
By Captain John V. Grombach

THE FIRST CAVALRY DIVISION IN THE THIRD ARMY MANEUVERS 336

PSYCHOLOGY AND MODERN WAR 338
By Major Charles A. Drake

GENERAL HAWKINS' NOTES, Hindsight Strategy and Tactics .. 340

PLANS FOR SURVEY OF POTENTIAL HORSE CAVALRY RESERVES 344
By William Murray Black

RESERVE OFFICERS: HOW MANY ARE READY FOR M-DAY? . 346
By Lieutenant Lawrence M. Rich

WHAT WOULD YOU DO? 347

WISHFUL THINKING 349
By General Gripe

NOTES FROM THE CAVALRY BOARD 360

THE BIRTH OF A STREAMLINE PACK 361
By Captain R. M. Brightbill

THE FIRST THIRTY DAYS 365
By Lieutenant Marshall Wallach

UNIT TRAINING ACTIVITIES 367

BOOK REVIEWS 377

FOREIGN REVIEWS 381

WAR DEPARTMENT CHANGES, Cavalry Personnel 383

PUBLICATION DATE: AUGUST 10, 1940

Deadline date, next issue: September 10, 1940

THE CAVALRY JOURNAL IS NOT RESPONSIBLE FOR OPINIONS EXPRESSED IN PUBLISHED CONTRIBUTIONS

Editorial offices: 1624 H Street, North West, Washington, D. C.

Copyright, 1940, by the U. S. Cavalry Association.

Publication offices: 1406 East Franklin Street, Richmond, Virginia. Entered as second class matter at Richmond, Virginia, under the act of March 3, 1879, for mailing at special rate of postage provided in Section 412, Act of October 3, 1917. Terms: Domestic subscriptions, individual and organization, $3.00 per year. Foreign, $3.50 per year. Canada: including Wax Exchange Tax, $4.00. All subscriptions payable in advance. Single copies, 75c. Extra copies to subscribers, 50c. THE CAVALRY JOURNAL *does not* carry paid advertisements.

By

Brigadier General Henry J. Reilly

OFFICERS' RESERVE CORPS

ASK any American if there is a censorship in this country, he will immediately say, "Of course not."

There is no official censorship and strictly speaking no non-official one. The fact remains, however, that the American people are continually being surprised by events they find in their morning newspapers which would not be a surprise to them if they were kept properly informed.

In no country is the spot news of events which have happened and are happening, more quickly and better reported. This does not, however, in any way prepare the public for their appearance as facts.[1]

The only way we can prevent the possibility of having to face what the French faced unsuccessfully and the British are unprepared to face today is to be willing to examine why the successive events of the war have surprised us.

There are three periods in which the American people have not been told the brutal facts of the events which cast their shadows well before them. As great events do not spring from nothing but are always the culmination of a long series of lesser events there is no excuse whatsoever for our people having been kept in ignorance.

The first of these periods begins with the imposition of Sanctions on Italy by the League of Nations because of Italy's invasion of Abyssinia. It ends with the declaration of war by France and Britain September 3d, 1939.

The second begins with this declaration and ends with the French signature of the German and Italian armistices after her drastic defeat.

The third begins with these two armistices.

The period of sanctions proved conclusively that sea power alone cannot force a land power to surrender. It

---

[1] The author went to Europe the summer of 1937. He flew home from Portugal several months after war was declared. He visited all countries in Europe, some of them several times, except Russia where he had been twice before and Lithuania. He visited as well all Asiatic and African political divisions around the Mediterranean except Libya. On previous visits he had spent something like ten years in Europe. He has many contacts and friends in most European countries. He has spent twelve years in Europe altogether.

Before leaving the United States in 1937 the author prepared for his New York literary agent a memorandum outlining the political and military situation in Europe and the possibilities of war. He divided Europe and the Mediterranean region into different regions, each of which could be considered a center of possible trouble. He marked these regions on a map which accompanied the memorandum. Shortly before sailing the literary agent asked him to meet the representative of one of our national magazines to talk over the memorandum. This conversation might be summed up as showing no interest in the memorandum but interest in the social activities of a prominent American who had married royalty.

Since, every one of these regions has become a theater of war.

ship?

showed conclusively that unless the French army was used to invade Italy, Italy could not be brought to terms.

The fact that there was political chicanery connected with the whole affair does not in any way alter this basic fact.

This basic fact was entirely evident to the military world everywhere.

Let anyone look through the oceans of print discussing the sanctions published in this country and see if they can find this basic fact emphasized.

They will find every possible excuse given as to why the sanctions failed except the real one; that without a large army a well armed power cannot be defeated by sea power alone.

This was true in the days of Napoleon as anyone at all acquainted with the fact that the naval battle of Trafalgar took place in 1805 while Leipzic, the battle in which Napoleon was really defeated took place in 1813; Waterloo being merely the defeat of an attempted comeback.

Napoleon's day was the one before submarines and airplanes had greatly reduced sea power and above all its ability to blockade.

Foreigners in Italy at the time or from then on, who were not content to get their information from café gossip and conversations at the best luncheon and dinner tables but who had competent sources open to them, knew that the Fascist government and party were waiting for the opportunity to fight the British, the authors of Sanctions.

When Germany's rearmament reached the point that there could be no question that she would be the most powerful military power on land and in the air and that she did not intend to abide by the terms of the Versailles treaty the Italian Fascist government and party saw their opportunity. They took it and the Rome-Berlin Axis was formed.

The first test was the Austrian anschluss. The American people were flooded with tales of disgruntled Austrians who would revolt and the terrible fear of the Italians that the Germans now on the Brenner Pass would swarm into Italy and overrun it.

The plain fact well known to the military world and that part of the diplomatic world which examines questions objectively, was that the world was now faced with a strong military combination on land, at sea, and in the air.

A glance at any map showed the axis split Europe in two parts, from the Baltic in the north, south to include Italy, the center of the Mediterranean and Libya in North Africa. The new German fleet had been built to dominate the Baltic and the waters leading from it into the North Sea. The Italian fleet had been built to dominate the Tyrrenean and Adriatic Seas and to aid in the blocking of the Mediterranean from Sicily to North Africa.

The common border resulting from the annexation of Austria by Germany meant that the German troops and armament could move freely to help the Italians in case of war with the French or Yugo-Slavia.

The excellent combined air services of both could range in a few hours from Scandinavia and the North Sea to North Africa.

It is one of the strongest military combinations in history. It obviously put Italy in a position where she could consider demanding from her former allies more than formerly she had humbly begged.

It was a notification to the Balkans that they could no longer hope to play Italy against Germany and vice-versa.

It was a warning to Russia that should she as she did in 1914 enter a general European war on the side of France and Britain she would be even more isolated from them than was the case before. This both because Italy had changed sides and the Balkans would hesitate to join the Allies as did Serbia, Rumania and Greece before.[2]

Again the military world had no doubts as to the situation nor did those diplomats who think objectively. Again the American people were flooded with the results of café conversation, luncheon and dinner table gossip, and the points of view of those Americans who governed by their emotions are incapable of recognizing a disagreeable fact when they meet it.

---

[2] As it became evident that the Austrian anschluss was to occur the author rushed from Paris, where he had made his headquarters, to Rome to learn at first hand the effect on the Rome-Berlin Axis.

Finding that the Fascist government and party were primarily interested in the splendid strategical position which their combined military strength and geographical situation gave them, he sent an article describing this to his New York agent. The article was written objectively with all political discussion left out. The agent subsequently reported that he could not get it published.

In the meanwhile the Spanish civil war was approaching its decisive stage. With the help of 10,500 Germans and 65,000 Italians, Franco had built up an army of 800,000 white Spaniards with perhaps 15,000 Moors and an aviation force of probably 600 Spanish pilots.

What really was going on in Spain was of great importance for two reasons. These quite aside from any of the ideologies involved.

As Franco's side gained in strength there was more and more talk in certain quarters in France of no longer being content with secretly sending volunteers and armament to the Loyalist side. Instead there was talk of using French infantry divisions to seize Spanish Morocco, throw the Italians out of the Balearic Islands, and help Catalonia.

About this time the Munich crisis approached.

It was therefore of the greatest importance to know just how strong Franco would be should Italian and German help be withdrawn because of a war between the Axis powers and the Allies.

If Franco's strength depended upon the Italian and German forces then their withdrawal would mean he would be in no position to make any trouble for France along the Pyrenees. Such a threat would necessitate French troops being used on the Spanish frontier and thus weaken the number available for the German frontier, the Italian Alps and the Tunisan-Libyian frontier.

The military world was quite aware of the importance of this, the French in particular.

It is doubtful if the American people even had this most important subject pointed out to them despite the immense volume of matter printed about the Spanish Civil War at this time.

Munich came, and France and Britain accepted the appeasement policy. Accepting as true everything which was printed at this time about the British and French statesmen, the most important fact of all was hardly mentioned much less emphasized.

That fact was that the French and British soldiers advised their statesmen that they simply did not possess the armed strength necessary to go to war with the Axis at that time.

In the oceans of print made accessible to the American public the appeasers were sometimes praised but generally abused, but this hard military fact was left as a rule unmentioned and certainly was never emphasized.

The other important fact with respect to the Spanish civil war which was ignored was the birth of blitzkrieg (lightning war).

Steadily through march and battle the Germans and Italians with the Spaniards had been working to find the proper place in war for the children of the gas engine; the airplane, the tank, mechanized and motorized armament and transport of all kinds.

In the furnace of war they were putting to test the theories evolved since the last war. They found out where they were wrong, where right, and the necessary alterations in the armament and equipment to enable the maximum battle results to be obtained.

The final test was Franco's offensive in the shape of local actions during the Ebro battle, followed by the general offensive along the Segre River which was a break-through, and the subsequent pursuit which only ended at the French frontier.

Here was a perfect example of blitzkrieg in all its phases of heavy combat, a break-through and advance guard and pursuit work.

Here on a smaller scale was the same thing as the subsequent battle of Flanders, the battle of France and the subsequent pursuit which finished when France signed the German and Italian armistice terms.

Were the American people told all this by the press, newsreels, radio commenators, et al? Was it all carefully explained to them? Did they learn with all their eagerness to know the real place of aviation in war, the real place of the tank, the armored car, mechanized artillery, motorized infantry, and transport?

Were they told that these new weapons could not replace the old, that there still had to be infantry masses marching on foot, artillery and transport drawn by horses, artillery and transport carried by pack animals, and yes, cavalry on horses as well as cavalry in armored cars and tanks?[3]

Were Americans told that it is not aviation and tanks and armored cars *versus* infantry, horse artillery, and cavalry on horses, but aviation, tanks and armored cars *with* infantry, horse artillery and cavalry on horses?

They were not. So little has been told them on this subject that despite the terrible proofs that the British and the French have had as to what blitzkrieg really means the American people as a whole still believe that all we need is 50,000 planes and thousands of tanks with plenty of young men trained as mechanics to take care of both.

---

[3] After some months including numerous visits to the actual front where he saw the development of "blitzkrieg" taking place in battle and after talking to numerous Spaniards, Italians and Germans the author wrote an article on the latest use of aviation in battle. He accompanied it with sketches he made on the battlefield. It was written objectively and contained no political discussion whatsoever. The agent in New York subsequently reported that he could not get it published. It was published in the British *The Aeroplane*. This article was quoted in other British publications and in Germany.

He also wrote his New York agent that he had a great deal of material for an article on tanks in modern battle including the stories of participants. It was not wanted in the United States but was published in the French *L'Illustracion*.

As the Czecho-Slovak crisis approached the author wrote an article, "What is Franco's Army?" It was objectively written, all political discussion was left out. It was an eyewitness account of the Spanish, Italian and German troops which the author had actually seen and therefore a military estimate of just what France had to fear from the Spanish side in case of a general European war.

The New York agent reported he could not get it published. The author knows that from that time on to the downfall of France the French military were greatly interested in how much of an army Franco had and how efficient it was.

In this case many of the military world in England, France and the United States remained as ignorant as the public. Only a few British and French officers—these generally on the retired list, visited Franco's army. Most of them came of their own volition. They were not sent officially. The United States at no time had any official military representative with Franco's forces.

Throughout the Spanish civil war our public was fed stories concerning the inefficiency of the German matériel and Italian troops and matériel in Spain. At the same time they were told of the efficiency of the Russian troops and matériel in Spain. Some of the German and Italian matériel first sent to Spain and built primarily for speed rather than combat did not meet the test of battle. It was replaced by matériel which did.

The more the war progressed the more it was evident that while much of the Russian matériel was strongly built it was not of finished workmanship. The Russian tactical methods turned out to be poor.

This misreporting as to Russian efficiency in Spain coupled with years of propaganda in Britain and the United States as to the strength of the Russian army and air force helped the propaganda when war broke out, that Russia would join the Allies as she had done in the war of 1914-1917.

The well informed military world knew that the Russian army and air force were not first class and that they would go down rapidly before any German attack. They knew that while the Poles were good soldiers, had a larger army than the United States, that they were not equipped and armed to withstand a German attack.

They knew that while Great Britain had passed a conscription law as the result of her military weakness demonstrated by the Munich affair that she had not yet begun to raise a war army similar to "Kitchener's New Army" raised in 1914 and 1915.

They knew that Italy's switching sides meant that France could not concentrate her full strength on the German frontier as she had done in 1914, but had to leave considerable forces along the Italian-Alps border and the Tunisian-Libyian frontier in North Africa.

They knew also that Germany, because of Italy's switch, did not have to leave any troops on the Italian frontier or in the Balkans as had the German-Austrian allies in 1914.

Therefore it was quite obvious that Russia would refuse to join the Allies and probably would remain neutral or assume the rôle of a non-belligerent favoring Germany.

Yet Russia's assumption of this rôle and refusal to accept the Allies' offer came as a surprise to the American public. They had been led to believe that Russia would join the Allies.

Similarly the fall of Poland in eighteen days came as a surprise. It must be admitted that to most of the British, French and American military world Poland's defeat in eighteen days was a surprise because they had expected her to hold out for several months.

However, these were the military people who had failed

to learn the lessons of Spain and did not yet understand the tremendous power of blitzkrieg.[4]

It was perfectly evident to informed military people that France did not possess a sufficiently large army, the amount of heavy artillery with ammunition necessary, a sufficiently large aviation and one trained to act in support of troops on the ground. Therefore alone she could not successfully attack the German Siegfried Line.

It was equally evident that Great Britain could not send more than ten to fifteen divisions to reinforce the French. Also, the British aviation like the French was not trained to support troops on the ground in accordance with blitzkrieg methods, but to act on independent or semi-independent missions.

Therefore there could be no dispute of the fact that the Allies lacked utterly the military means to attack Germany with sufficient strength to save the Poles, much less to defeat the German army and air force.

This being true, why did France and Britain go to war?

They went because despite the majority of their soldiers' arguments to the contrary their statesmen had accepted the theory of bringing down Germany by a blockade at sea with nothing more than a defensive on land.

This idea was sold to the United States. Rivers of print were expended on supporting it with opinion and statistics of bankers, business men, economists. The consequence was that the American public probably with few exceptions never realized that this theory was seriously challenged from the very beginning by most of the military world.

This was all the more true because the ideas of Captain Liddell-Hart had been widely disseminated to our reading public. Also many of the so-called military experts, few of whom have ever heard a hostile shot, helped the public in its easy acquiescence of this comfortable viewpoint. Comfortable because it does not necessitate the raising of large armies. Therefore the mass of the people can stay at home as did the bourgeoise in the Middle Ages, when the knights and men-at-arms did the fighting.

Unfortunately some enthusiastic navy officers unwilling to recognize or not sufficiently acquainted with military history, and some enthusiastic aviation officers ignorant of the fact that the Spanish civil war proved General Douhet's theories faulty added their arguments to the volumes of print already deluding the American public.

Each proof of the tremendous military power of blitzkrieg waged by the Germans which has added one more chapter to the increasing volume of events shows that the sword is stronger than the pound, franc and dollar. Yet this fact has been obscured by alibis so as to avoid facing it.

Here are the alibis!

Poland's downfall in eighteen days is ascribed to the weather, faulty strategic concentrations by the Poles, and the inefficiency of the Polish Army! Blitzkrieg removed Germany's fear of having to fight on two fronts as from 1914-17.

Norway's downfall was due to the Fifth Column! Blitzkrieg broke Britain's blockade of the North Sea and opened a route for Germany into the Atlantic.

Holland's disappearance in five days was due to water not running into the flooded areas quickly enough! Blitzkrieg gave Germany air and submarine bases immediately opposite England.

The battle of Flanders which resulted in the surrender of the Belgian army, the defeat of the British Expeditionary Force and its evacuation from the beach of Flanders to England, and the loss to France of from fifteen to twenty divisions is primarily blamed on the Belgian surrender! Blitzkrieg beat British, Belgian and French forces not armed and trained to meet it.

The defeat of France in the Battle of France is blamed on various forms of treachery within France! The statesmen always amateur strategists compelled General Gamelin to abandon a sound defensive and by moving troops from their proper defensive position, north into one in which defeat in detail first in the battle of Flanders and then in the battle of France was inevitable.

Apparently every reason, some of them true but of minor importance, is being used to dodge facing the one brutal reason for these defeats, the reason which must be faced if victory is ever to be had over the Germans and the Italians.

It is that a nation at war must raise, if it has not done so, in peace time an army of millions. It is that aviation and tanks even if had by the thousands cannot be used to their maximum efficiency unless they are backed up and are part of an army of masses of infantry supported by a greater proportion of artillery and more types of artillery than have ever been used before.

In other words, the children of the gas engine have not and do not furnish a means by which the people of a country can escape from having a nation in arms.

Germany had 212 divisions of infantry, France had 106. France was reinforced by not more than 12 British divisions, making a total of 118 including the French divisions in Africa and along the French Alps, as against 212 German less six in Norway, or a total of 206.

Italy's entrance raised this total to 318.

Admit that the French did not have as much modern armament and equipment as the Germans. The fact still remains that not more than 45 French and one British division which began the Battle of France were faced with a greatly superior force. In fact one so superior in numbers that even had the French and British had as modern armament as the Germans the result inevitably would have been defeat.

---

[4] While in Ankara, Turkey, the author received a letter from the *Illustrated London News* saying that they had seen his articles with sketches in *The Aeroplane* and *L'Illustracion*. They wanted to know if he would come to London and talk over with them an article along similar lines. By this time, in Rome he had learned of the reorganization of the Italian army then under way due to the lessons in Spain. He had also talked in considerable detail about these lessons and that reorganization with General Pariani, then Assistant Secretary of War and Chief of Staff. General Pariani had also outlined the application of these lessons to the Albanian campaign then just finished. The author flew directly to Albania where he talked to various eyewitnesses and participants.

Therefore when he reached London he suggested to the *Illustrated London News* that the time had come for an article on what blitzkrieg would be when war came. This article published August 19, 1939, with photographs and sketches illustrating it turned out to be a quite correct account of the technique used in the Polish campaign two weeks later.

June 1, 1940 the *Illustrated London News* republished this article, stating that they were doing so because it had turned out to be such a correct prophecy.

They also cabled the author asking for a thousand words on how to stop blitzkrieg. This has since been published by them.

Only the raising by Britain of at least 100 divisions and their transport to France to stand alongside the French army to meet the German assault could have given a chance of victory.

Germany through the training and arming of her manpower by conscription and her acceptance of the lessons of the Spanish Civil War as to the best use for the children of the gas engine has in existence a military machine which can only be defeated by a more numerous and equally efficient military machine.

Through this machine she has broken out by combat or by the fear of having to face her in combat, from the attempted blockade of the Allies. This blockade to be effective at sea must now cover the whole seacoast of Europe from Russia on the Arctic Ocean to the Pyrenees and the seacoast of North Africa from Tangier to Dakar, inclusive.

The whole eastern and southern front of the last war is non-existent. Seven principal lines of supplies have been opened with Russia overland and one across the Black Sea.

All of the Balkans are doing everything which Germany wishes to enhance her supplies. They have disassociated themselves from the Allied effort to hinder this.

As there has been no war in the Balkans there has been nothing to hinder their usual production of all kinds.

Turkey which was to have been the jumping-off region for the Allied army of the Near East or to have helped this army advance from Saloniki after watching the various exhibitions of German strength in battle and of Allied weakness has backed out. She is only afraid that she cannot succeed in placating the Axis powers and thus escape punishment similar to that meted out to Rumania because she played with the Allies too long.

How different is this situation from the one the American public was led to believe was being built up in the Near East and in the Balkans.

They were fed tales of an Allied army of at least a million under General Weygand. It was to capture the Russian oil fields at Baku and to march up through the Balkans to attack Germany in the rear.

The informed military world knew from the beginning that it never did exist in large numbers. This for the very simple reason that neither France nor the British Empire possessed the troops necessary to build up any such force. After all, the population of Senegal and Morocco is limited. Many troops from each already formed part of the army in France and that along the Tunisian-Libyian border even before the war. The balance available for Syria could not be great.

The British regular army had no force available for any expeditionary force in the Balkans. It was confronted with the necessity to garrison Hongkong, Shanghai, India, Aden, Egypt, Palestine, Malta, Gibraltar, send five divisions to France, and leave enough at home to train recruits. Australia, New Zealand and Canada always do their share. However, the population of each is small so that the number of troops which can be raised is limited.

The truth of the matter is that beginning with the Washington Arms Conference of 1921-1922 the country has been fed so much pacifist propaganda that apparently it had begun to believe that the phenomenon of force had ceased to exist.

It has been so taught to believe that nothing can be gained by war, that it has finished by becoming convinced that money and economic resources are stronger than the sword.

It has been so taught that it can have whatever it wants by simply declining to do anything it does not want that it has forgotten that a strong armed enemy can force it to choose between doing what it does not want or having to fight.

Despite what is happening in Europe, despite what has happened in the Far East and is threatened in the Far East, it still has not made up its mind that voting to keep out of war cannot keep it out of war if it is attacked by one or more strongly armed enemies.

Aften ten months of war we are waking up to our danger but we are still unwilling to face the facts of the real causes of this danger and what we must do to escape it.[5]

---

[5] Since arriving home the author has tried to interest the editors of various national magazines, two broadcasting companies and one newsreel company in a portrayal of the military situation in Europe as it is and in explanations of what blitzkrieg really means.

Outside of an article in *Foreign Affairs* on blitzkrieg, several articles in various service journals and in the *Encyclopedia Britannica Yearbook*, he has been unsuccessful.

One magazine took an article with sketches on the Maginot Line and what it would mean to break it by assault, and also an article with a map showing the armed strength of Germany. Though events have shown both these articles to be correct more than six months have elapsed without their being printed.

* * * *

"The assailants' strength has always lain in his power of maneuvering, of hiding his movements, and of massing suddenly against some weak point."

POWER Plus Speed

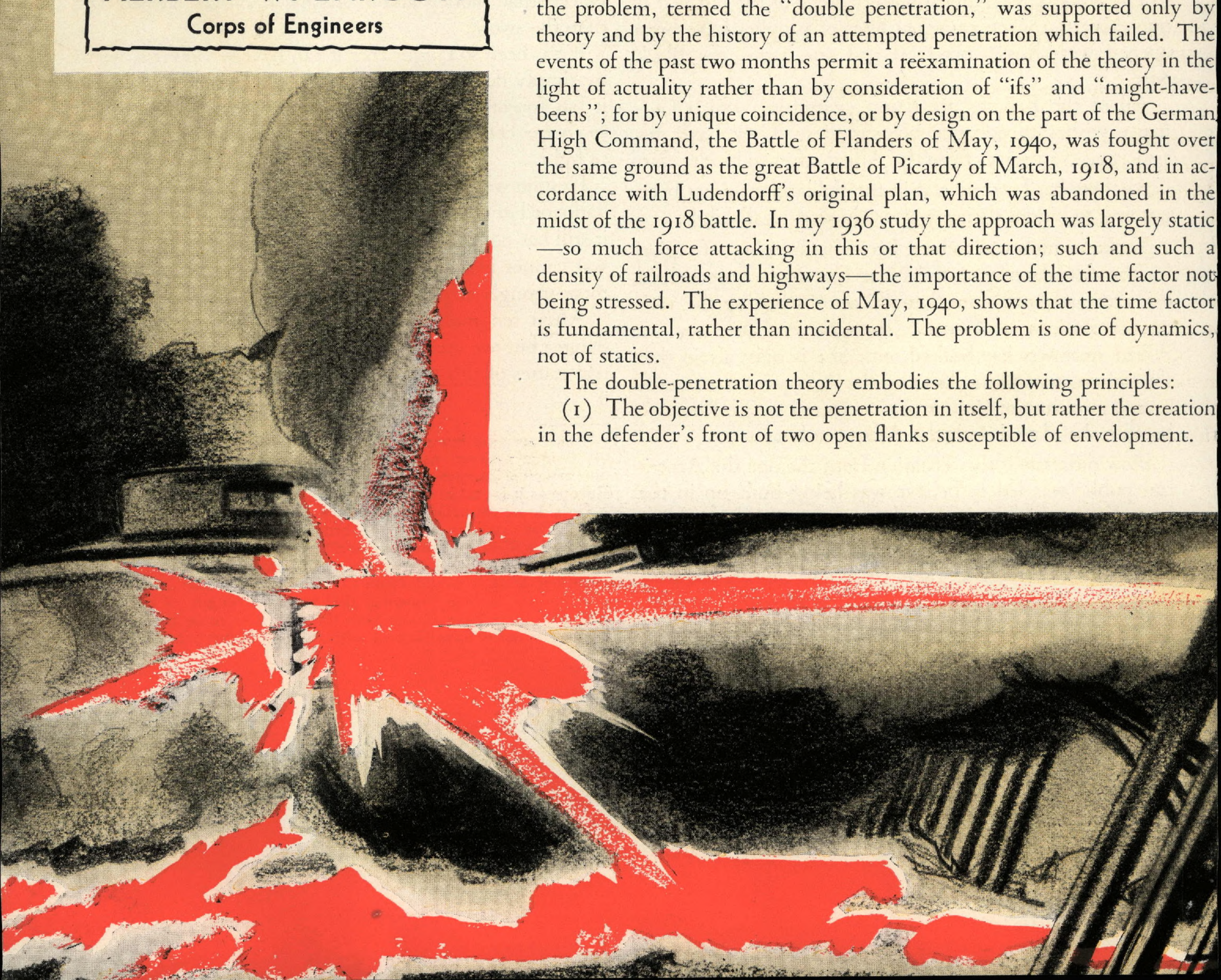
THE ESSENCE OF THE

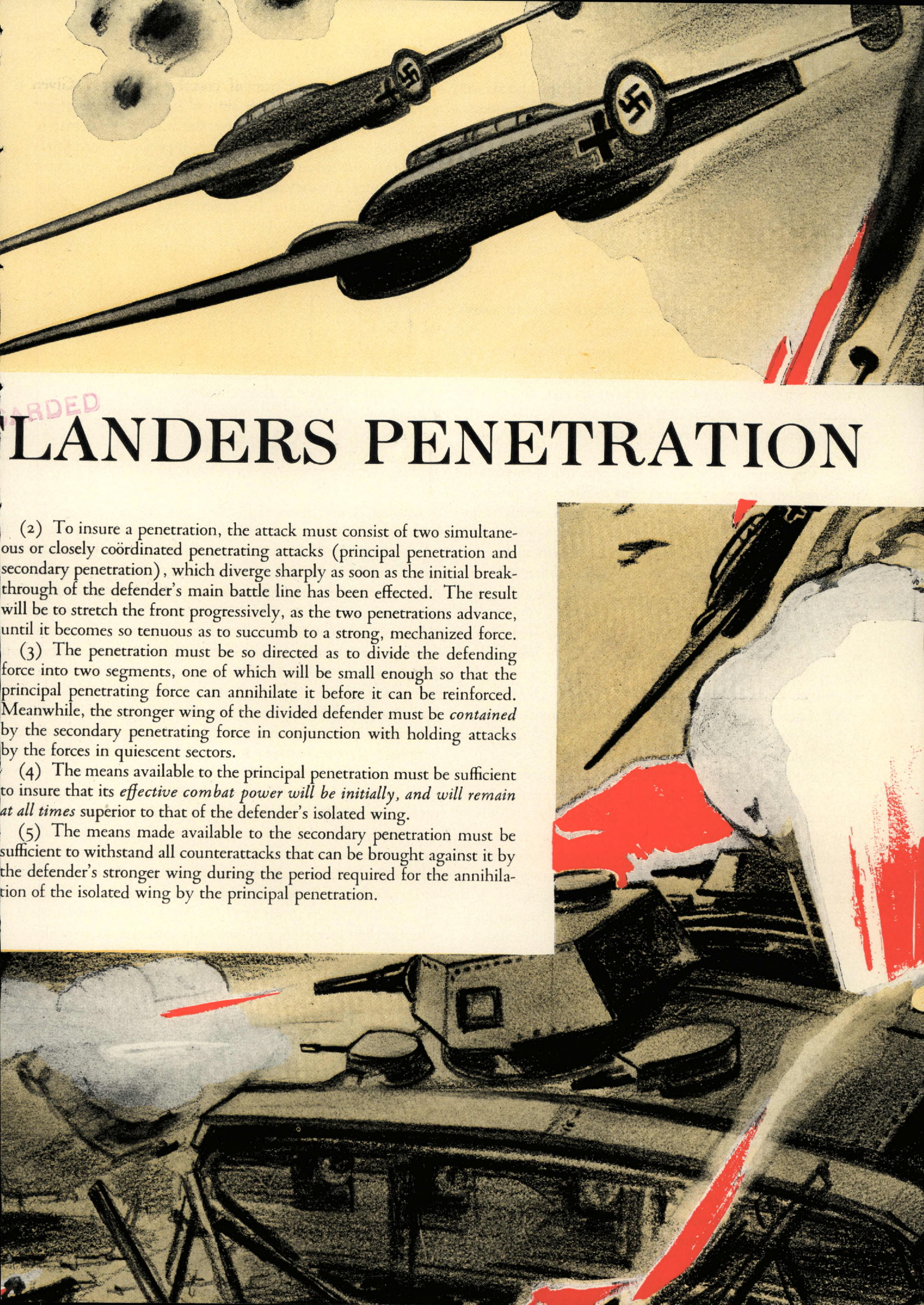
By Captain
HERBERT W. EHRGOTT
Corps of Engineers

Some years ago in another service journal I presented a theoretical analysis of the problem of the penetration. At that time my solution to the problem, termed the "double penetration," was supported only by theory and by the history of an attempted penetration which failed. The events of the past two months permit a reëxamination of the theory in the light of actuality rather than by consideration of "ifs" and "might-have-beens"; for by unique coincidence, or by design on the part of the German High Command, the Battle of Flanders of May, 1940, was fought over the same ground as the great Battle of Picardy of March, 1918, and in accordance with Ludendorff's original plan, which was abandoned in the midst of the 1918 battle. In my 1936 study the approach was largely static —so much force attacking in this or that direction; such and such a density of railroads and highways—the importance of the time factor not being stressed. The experience of May, 1940, shows that the time factor is fundamental, rather than incidental. The problem is one of dynamics, not of statics.

The double-penetration theory embodies the following principles:

(1) The objective is not the penetration in itself, but rather the creation in the defender's front of two open flanks susceptible of envelopment.





ARDED

FLANDERS PENETRATION

(2) To insure a penetration, the attack must consist of two simultaneous or closely coördinated penetrating attacks (principal penetration and secondary penetration), which diverge sharply as soon as the initial breakthrough of the defender's main battle line has been effected. The result will be to stretch the front progressively, as the two penetrations advance, until it becomes so tenuous as to succumb to a strong, mechanized force.

(3) The penetration must be so directed as to divide the defending force into two segments, one of which will be small enough so that the principal penetrating force can annihilate it before it can be reinforced. Meanwhile, the stronger wing of the divided defender must be *contained* by the secondary penetrating force in conjunction with holding attacks by the forces in quiescent sectors.

(4) The means available to the principal penetration must be sufficient to insure that its *effective combat power will be initially, and will remain at all times* superior to that of the defender's isolated wing.

(5) The means made available to the secondary penetration must be sufficient to withstand all counterattacks that can be brought against it by the defender's stronger wing during the period required for the annihilation of the isolated wing by the principal penetration.

This scheme of maneuver contemplates maximum use of the principle of *Economy of Force* by the secondary penetration, in order to endow the principal penetration with sufficient *Mass* to insure a "Cannæ" against the defender's isolated wing.

The requirements for the success of the double penetration were listed in my 1936 study as follows:

(1) The location of the offensive must lend itself readily to deception, not only as to time and place, but also as to which is to be the principal and which the secondary penetration as the attack develops.

(2) The principal penetration should be directed away from the defender's main reserve mass.

(3) The zone of advance of the principal penetration must contain a network of communications which, in conjunction with available transportation means, is capable of maintaining and supporting the advance at such a pace as will insure at all times the supremacy of the attack over the defense.

(4) The zone of advance of the principal penetration should include few natural obstacles to the rapid progress of the attack, few strongly defensible natural positions on which the enemy may reconstitute his lines.

(5) If possible, the exposed flank of the principal penetration should be protected by an easily defensible extended obstacle such as a wide river, a marsh, or a range of hills.

(6) The attack should preferably be in an area poorly served by communications on the defender's side of the line—particularly lateral communications connecting the two wings.

(7) There should be available, as the limited objective of the secondary penetration, a strong natural defensive position having the following characteristics:

It should be attainable in the shortest possible time.

It should be capable of being quickly organized for resistance, and of being held by the force available for use until the principal penetration can complete its task and return to the aid of the secondary penetrating force.

Its open wing should be based on a strong terrain feature or tactical area difficult of envelopment.

It should command the routes of lateral communication between the defender's main reserve mass and his isolated weaker wing.

(8) The location of this defensive flank established by the secondary penetration must be such as to afford maximum protection to the nerve centers of communication which serve the principal penetrating force during the battle of annihilation.

It will be noted that all these requirements revolve about the necessity facing the principal penetration of enveloping and defeating the defender's weaker wing *before* relief can reach it from the main hostile reserve mass. It is the old problem of concentrating superior combat power at the critical time and place, *and maintaining this superiority throughout the necessary period of time.*

A solution is possible only if the attacker can gain a decisive superiority in one or more of the factors which affect the balance of combat power. Given essentially equal combat power in a theater of operations, it may be assumed that the force holding the initiative (hereafter called the attacker) can concentrate superior power initially against any selected portion of the enemy's line, and thus achieve a momentary break-through. This initial power superiority must be maintained above a critical minimum value throughout the period required for the battle of annihilation. Stated in mathematical language,

$$P_A - P_D = S_H \qquad \text{on H-Day (1)}$$

$$\text{and} \quad \left[P_A + \int_H^{H+T} R_A \right] - \left[P_D + \int_H^{H+T} R_D \right] = S_{H+T} \qquad \text{after H-Day (2)}$$

Where P_A designates the initial combat power of the attacker, and P_D that of the defender
R designates the rate of change of combat power and

$\int_H^{H+T} R$ represents the net increment (or decrement) of combat power between H-Day and (H+T)-Day. Expression (2), *the equation of differential combat power,* states in symbols the necessary and sufficient condition which must exist if the principal penetration is to succeed in its mission. Similar expressions apply to the secondary penetration and to all other portions of the opposing forces.

The equation of differential combat power (2) is merely another form of the estimate of the situation—a way of expressing in mathematical symbols the balance of combat power which determines the success or failure of an operation. It differs from the familiar five-paragraph estimate only in the fact that instead of the vague subjective language of comparatives it employs a more exact symbolism.

Equation (2) emphasizes the dynamic nature of a complete estimate of the strategic situation in planning a campaign. Not only must a separate estimate be made for each portion of the theater of operations, to determine whether to attack or defend at that point, but a whole series of estimates must be made in each case [for H-Day, H+I)-Day, etc. . . . up to (H+N)-Day] to determine whether the operation will probably proceed successfully to the hoped-for conclusion.

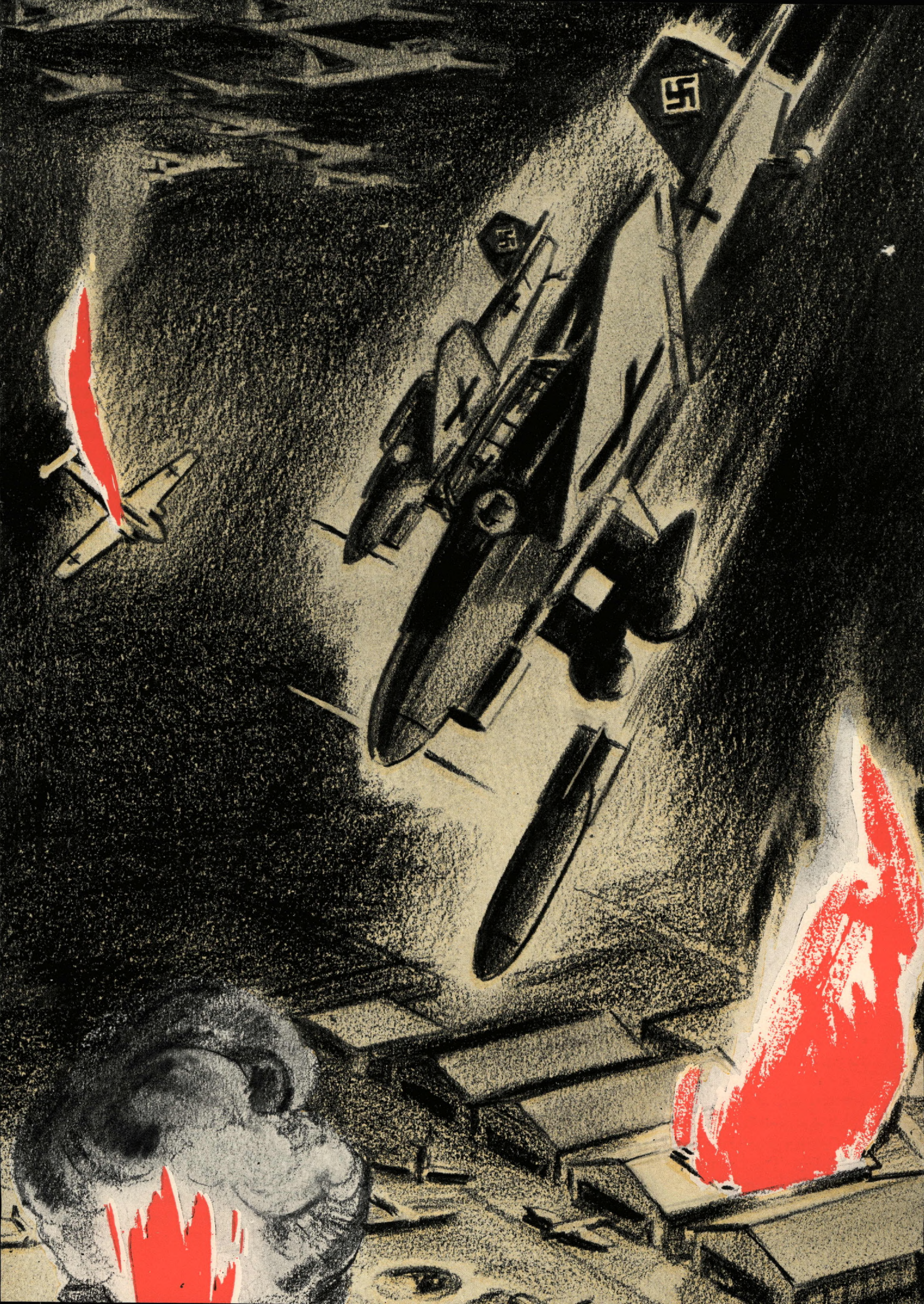
The attacker can influence the equation in his own favor in three ways:

(1) By increasing the superiority of the initial combat power of the attacker over that of the defender. This can be accomplished either by increasing the combat power of the attacker or by decreasing the defender's immediately available combat power, through diversions.

(2) By increasing the time increment of combat power to the attacker.

(3) By decreasing the time increment of combat power to the defender.

If the attacker is to maintain his initial combat superiority for the necessary time, he must conduct his operations in such a manner as will keep the *net incre-*



ment of combat power to the defender below a figure which would bring the defender's combat power to equality or superiority over that of the attacker before the principal penetration can complete the battle of annihilation. How this can be accomplished becomes evident when we break down the time increment of combat power into its component elements:

(1) Battle losses, in casualties, equipment, ammunition, food, organization and morale (decrement for both sides).

(2) Loss of organized defensive positions or defensible terrain (decrement to the defender).

(3) Reinforcements reaching the opposing forces (increment for both sides).

(4) Loss of elements in the systems of communication, control and transport (decrement to the defender, and a somewhat smaller decrement to the attacker, to the extent that he has to operate over the areas in which communications are disrupted). Generally this element favors the attacker, since he can make extensive preparations to nullify enemy action against the vital points of his own communications, while the defender cannot know beforehand on which points to concentrate his defense.

Each of these elements of the time increment of combat power, as well as the initial combat power iself, involves two factors: *force* and *mobility*. As between two equal opposing forces, that having the greater mobility (assuming equally competent leadership) will prevail. Great commanders, when opposed by equal or superior force, have always sought a decisive advantage in mobility. Napoleon achieved such an advantage in his innovation of supply by combat wagons and carts. The elder Moltke built his victories largely on the masterful use of railroads for the movement and supply of his armies—a matter little understood by his opponents. The World War on the other hand, found neither side in possession of any such decisive means of attaining superior mobility. And since the opposing forces were essentially equal, the war necessarily degenerated into one of pure attrition, with Providence on the side of the larger battalions. By superior tactics and organization the Central Powers succeeded in nullifying for four years the Allied superiority in the time increment of combat *force*, but they never succeeded in developing a sufficient preponderance of *mobility* to maintain the attack one step ahead of the defense. Neither side was ever able to prevent the enemy from freely transferring reserves to a threatened point in time to reëstablish the situation. Under such conditions no penetration could be successful until one of the opponents was completely exhausted.

The lessons of the World War were studied exhaustively by all the armies of the world. The conclusions drawn by the German general staff may be summed up in one word: Blitzkrieg. The Germans have for long understood the fundamental principles of war, including that of mobility. The perfection of motorized weapons offered a new means of gaining decisively superior mobility—the first new means since the development of the railroad. The army that could gain a momentarily decisive superiority in planes, trucks, and motorcycles (assuming approximate equality in other respects) would possess the power not only to breach a hostile defensive system, but more important, to outstrip all hostile reserves of combat power. For the motorized weapon combines in a degree unsurpassed in military history the qualities of force and mobility. It not only increases the combat force of the possessor but enables him to attack directly the means by which his opponent can renew his own combat force. It not only increases the mobility of the possessor but enables him to reduce the mobility of his opponent. With enough such weapons it would be possible to wage a war of shattering force and unexampled speed.

By 1935 Germany had secretly prepared a big enough force of planes and motorized and mechanized divisions to risk the colossal bluff of the occupation of the Rhineland and the Saar—a step which gained for her complete freedom of action for the production of the mass of motorized weapons required for a successful bid for victory over the Allies. The blitzkrieg concept was given its preliminary try-out in the Spanish civil war, and proved sound. As long as the Spanish Loyalists were able to maintain approximate equality in the air (they had relatively few tanks or trucks) the Insurgents could make little headway. But once the Italian and German planes, trucks, and tanks had given the Insurgents unquestioned superiority in strategic and combat mobility, the balance of combat power tipped steeply in favor of the attackers. Meanwhile Germany was proceeding with the development of every possible means of gaining and being assured of maintaining, during a limited period, unquestioned superiority in motorized weapons.

The air arm was given particular attention in the light of the combat experience gained in Spain. Plane designs were improved and standardized. In-line production methods were introduced into vastly expanded automotive and aircraft plants. Vital industries were removed from the Ruhr into the interior. Production was ruthlessly decentralized into large numbers of scattered plants, at a sacrifice to efficiency, but with a vast increase in strategic security. In some cases complete airplane factories are said to have been constructed underground, safe against observation and bombardment. Carefully camouflaged underground hangars, with arsenals and servicing facilities, were built everywhere behind the Westwall. Bullet-proof gas tanks were developed. Swarms of pilots were instructed by the chain method, each half-trained recruit becoming an instructor as rapidly as new planes were made available. In both planes and pilots quality was sacrificed to quantity in view of the expected rate of attrition. Air provisioning of ground troops was investigated. Parachute troops were developed. Antiaircraft defense was brought to a high degree of effectiveness, with all vital installations protected as completely as possible. Gasoline storage was decentralized, and as far as possible placed underground.

Motor transport received the same intensive treatment.

Great wide cross-country speedways were constructed to provide increased strategic mobility. Facilities for the mass production of trucks, tanks and motorcycles were obtained through the subterfuge of the *Volksauto*. Motorized infantry divisions were multiplied. The light six-ton tank, which had proven unsatisfactory in Spain, was replaced by a new light tank of about ten tons, and medium and heavy tanks with more power and speed, heavier armament, and thicker armor. A number of these new tanks are believed to be amphibious. Cross-country troop and ammunition carriers were perfected. New types of bridges were designed to carry the heaviest loads, with particular emphasis placed on speed of erection. Key bridges expected to be demolished in anticipated theaters of action were duplicated, and special detachments were trained in their rapid erection. Tactical organization was modified wherever necessary, to make combat units less dependent upon supply by railroad.

Finally, most important of all, tactics involving the closest coöperation of these new fast elements of combat force were worked out and practiced until all units blended together into a smoothly working team. At the same time, an improved, modernized tactics, based on infantry, tank, and air corps coöperation, was developed with a view to maximum interference with all the vital links in the enemy's systems of communication, control, and plane and motor production.

The new material was given its first real workout in the marches into Austria and Czechoslovakia—a sort of shake-down cruise. The final field test of the organization and combined tactics was made against the ill-prepared Polish Army, and proved entirely successful. It was apparent that the German Army was in temporary possession not only of a superior combat force, but also of a method which endowed that force with superior mobility and made possible consideration of the main drive against Britain and France.

The strategic problem, in its broadest terms, was to force the Allies into a decisive battle before their vast industrial power and raw material resources could be mobilized. How was this to be accomplished? Sun Tzu once wrote:

> If we wish to fight, the enemy can be forced to an engagement . . . [if we] appear at points which the enemy must hasten to defend.

What points would the Allies "hasten to defend" if attacked? There were several: the oil fields of Syria; the Suez Canal and Gibraltar; the Maginot Line; the Italian frontier; the entire Channel and North Sea coast, from Le Havre to Trondheim, from which devastating attacks could be launched, by sea and air, against British industrial centers and the absolutely vital Allied shipping and naval power. Of these possible objectives, only the last mentioned promised the opportunity of finally coming to grips with the main bodies of the Allied land and sea forces under favorable conditions. The others could serve admirably as diversions, in accordance with the principle of Economy of Force.

The main effort must be concentrated on the North Sea and Channel coasts. This involved the invasion of Norway, Denmark, Holland, Belgium, and Luxembourg, with the consequent disadvantage of increasing the enemy's initial combat power. To counter-balance this disadvantage, certain economic advantages were to be gained by the occupation of each country.

Norway: Depriving the Allies of important supplies of pulp, wood, ore, and fish products, with corresponding gains to Germany. Completely isolating Sweden from trade with the Allies, giving Germany a practical monopoly of her entire industrial effort, including the vital Swedish iron ore.

Denmark: Depriving the Allies of important fish, farm, and dairy products, with corresponding gains to Germany, which was in great need of those very products.

Holland: Agricultural and dairy products, stocks of strategic metals, considerable stores of gasoline and oil, and refineries. Important rail and water communications for the supply of German armies in Belgium and Northern France.

Luxembourg: Access to Belgium and the open flank of the main Maginot fortifications. Important deposits of coal and iron, and a large iron and steel industry.

Belgium: Large reserves of gasoline, oil, and strategic metals, great deposits of coal suitable for reduction to gasoline, an important industrial plant. Most important of all, a dense network of railroads, roads, and canals pointed straight at the vital industrial sections of Northern France, on her one relatively open frontier.

The invasion of all these neutral countries was worked into a comprehensive scheme for enticing the Allied armies into a decisive battle in open country. Norway was to be used as a diversion, to draw Allied reserves out of position, and to camouflage final preparations for the main effort. Holland and Belgium would serve as bait, to draw the French and British out from behind their Little Maginot Line. For it could be assumed that Britain's vital interests would force her to come to the aid of Holland by way of Belgium, and that Belgium would thereby be forced to throw in her lot with the Allies. The initial thrust against Holland had to be overwhelming—not only to eliminate Dutch combat power promptly, but to outflank the Belgian armies, forcing them to withdraw from their eastern defenses. Meanwhile, the main attack would be developing, through Luxembourg and the Belgian Ardennes.

We cannot know for some time General Gamelin's estimate of the situation, nor the details of the northward movements of the Allied armies between May 10 and May 13 (map 1); but all the information available seems to indicate that the Allied high command diagnosed the German attack as an enlarged and improved version of Schlieffen's sledge-hammer plan. Much of the French force in the Dinant area appears to have been hurried north to the aid of the Belgians, so that the German debouchment in force from the Belgian Ardennes found the Meuse line from Mézières—Charleville to Givet inadequately defended. At the time the Germans rushed across the Meuse on May 14 and 15 the main body of Allied mechanized forces was heavily engaged with the German mechanized spearhead driving southwestward from Maastrict toward Gembloux. Perhaps the Allies were aware of the power of the German drive through the Ardennes, and believed the French IX Army was strong enough to hold the Meuse line. If so, it was a costly miscalculation, for the IX Army was completely engulfed by the German tidal wave, and the attack proceeded too swiftly for a reconstitution of lines. There is much in the communiqués and official and semi-official statements of May 15 to 18 to indicate that the Allies believed the breakthrough between Mézières and Dinant (map 2) was aimed at Paris. German comment throughout those days certainly nourished such a belief. But the entire strategic situation, the preliminary air bombardments of Calais, Dunkirk, Lille, Béthune, Lens, Amiens, and Arras, and the constant preoccupation of the German General Staff with the idea of a battle of annihilation, all pointed clearly to an attempt to envelop the northern armies from the south and west. By May 19 the battle line bore a striking resemblance to that which had existed on March 21, 1918, except for the Allied "bulge" surrounding Mons, Maubeuge, and Valenciennes. It was on this day that the main attack turned definitely toward the northwest, following exactly the route prescribed by Ludendorff's original operations order of March, 1918. It soon became apparent that the previous attacks, toward Sedan, Rethel, and Laon, were merely phases in the establishment of a defensive flank, behind the protection of which the principal penetration (via Cambrai—Arras—St. Pol) could proceed with its mission of surrounding and destroying the Belgian and northern British and French armies.

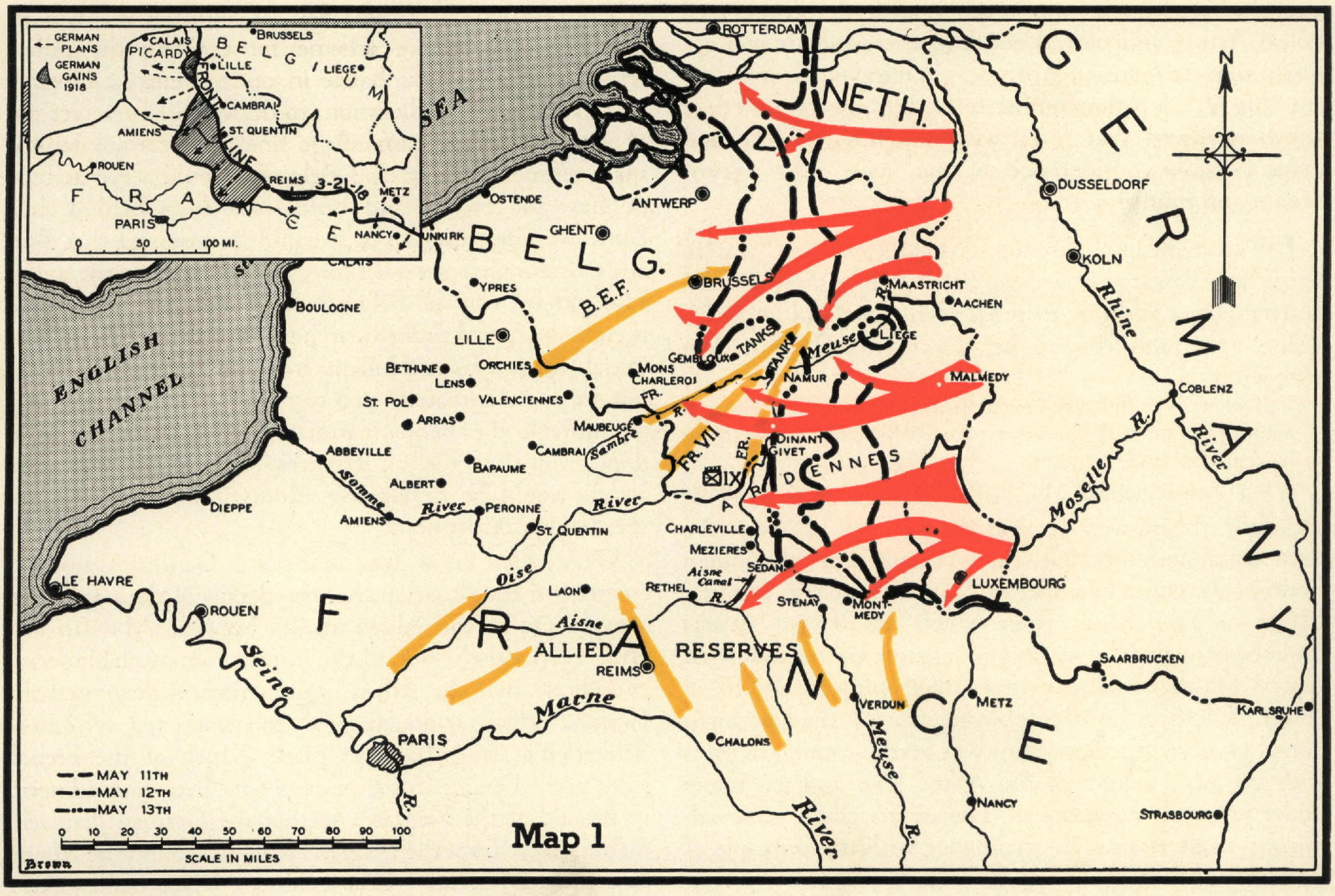
Returning to the double penetration, it will be seen that all the conditions listed at the beginning of this article were fulfilled:

(1) The location and timing of the main penetration were admirably calculated to deceive the Allied High Command. For the first two days the full power of the German forces appeared to be concentrated against Holland and northern Belgium. The force of the penetrating attack was well hidden in the hills and forests of Luxembourg and the Belgian Ardennes. When the magnitude of the penetration became apparent, it was not clear until about May 18 whether the main effort would be turned in the direction of Paris or toward the coast.

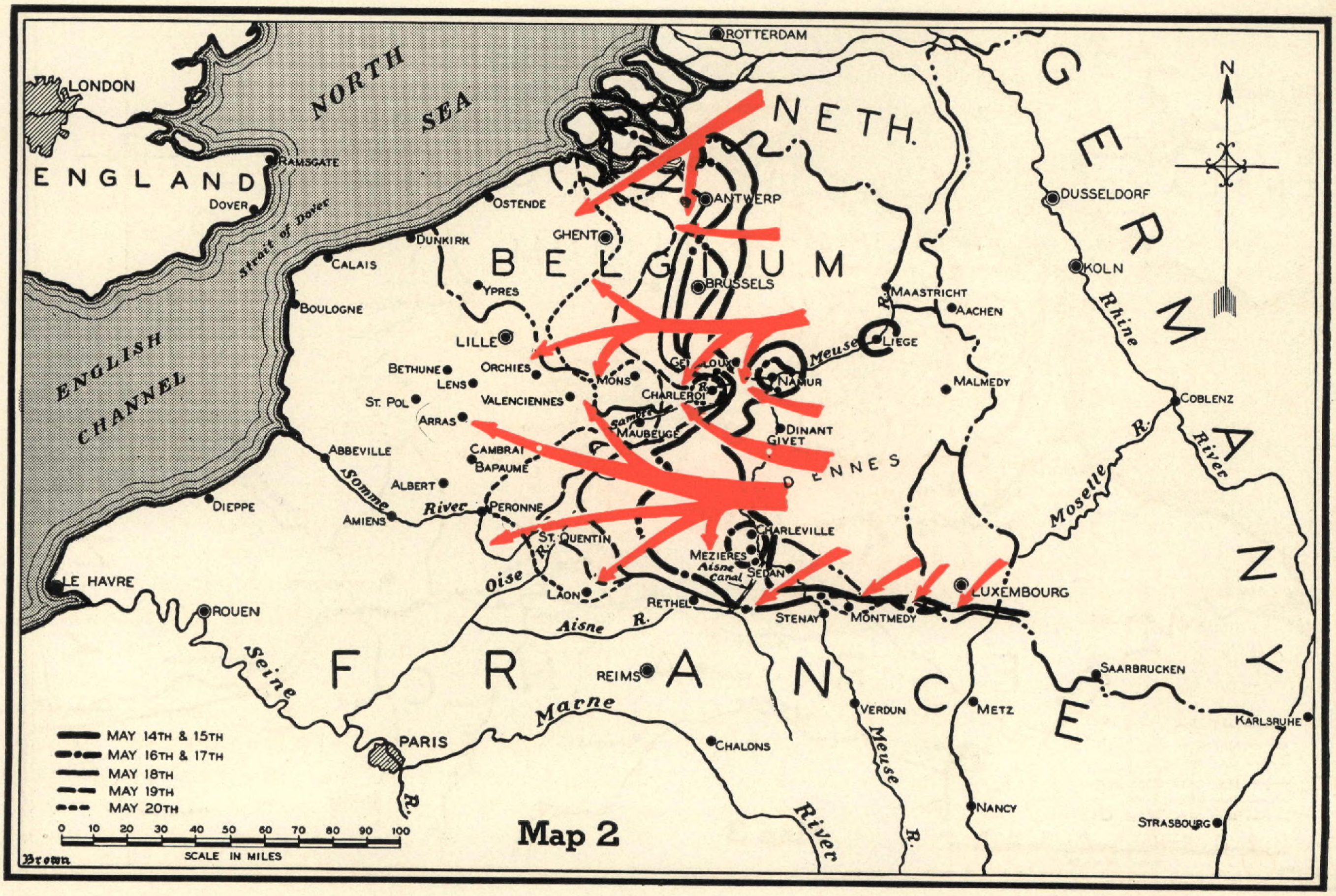
(2) The principal penetration was directed away from the defender's main reserve mass, and sought to cut off and destroy a large segment of the Allied forces.

(3) The zone of advance of the principal penetration was selected with a particular eye to communications, but by road rather than rail: Luxembourg, the Belgian Ardennes, and Guise have very few east-west railroads, and what few there are are secondary lines. It is evident that reliance was placed almost entirely on motor transport for troop movement and supplies.

(4) The zone of advance crossed only one important


GERMAN PLANS
GERMAN GAINS 1918
CALAIS
PICARDY
BRUSSELS
BELGIUM
LILLE
LIEGE
CAMBRAI
ST. QUENTIN
AMIENS
FRONT LINE
ROUEN
REIMS
3-21-18
METZ
FRANCE
PARIS
NANCY
0 50 100 MI.
NORTH SEA
ROTTERDAM
NETH.
OSTENDE
ANTWERP
GHENT
DUNKIRK
CALAIS
BELG.
GERMANY
DUSSELDORF
KOLN
Rhine
N
BRUSSELS
MAASTRICHT
AACHEN
YPRES
B.E.F.
BOULOGNE
ENGLISH CHANNEL
LILLE
ORCHIES
GEMBLOUX
TANKS
TANKS
Meuse R.
LIEGE
BETHUNE
LENS
MONS
CHARLEROI
NAMUR
MALMEDY
ST. POL
VALENCIENNES
FR.
COBLENZ
ARRAS
MAUBEUGE
Sambre R.
FR. VII
FR.
ABBEVILLE
CAMBRAI
DINANT
GIVET
ARDENNES
IX
Somme
BAPAUME
ALBERT
Moselle R.
River
DIEPPE
AMIENS
River
PERONNE
River
ST. QUENTIN
CHARLEVILLE
MEZIERES
SEDAN
Aisne Canal
LE HAVRE
Oise
LAON
RETHEL
R.
LUXEMBOURG
STENAY
MONTMEDY
ROUEN
FRANCE
Aisne
ALLIED RESERVES
REIMS
SAARBRUCKEN
Seine
Marne
VERDUN
METZ
KARLSRUHE
PARIS
CHALONS
Meuse R.
MAY 11TH
MAY 12TH
MAY 13TH
0 10 20 30 40 50 60 70 80 90 100
SCALE IN MILES
River
NANCY
STRASBOURG
Brown

Map 1


ROTTERDAM
NETH.
GERMANY
LONDON
NORTH SEA
ENGLAND
RAMSGATE
DOVER
Strait of Dover
OSTENDE
DUNKIRK
GHENT
ANTWERP
DUSSELDORF
BELGIUM
CALAIS
BRUSSELS
KOLN
MAASTRICHT
AACHEN
YPRES
BOULOGNE
Rhine
LILLE
ENGLISH CHANNEL
BETHUNE
ORCHIES
LENS
MONS
GEMBLOUX
NAMUR
LIEGE
Meuse
MALMEDY
ST. POL
VALENCIENNES
CHARLEROI
Sambre R.
MAUBEUGE
COBLENZ
ARRAS
DINANT
GIVET
CAMBRAI
BAPAUME
ABBEVILLE
ARDENNES
Moselle R.
Rhine River
ALBERT
Somme River
PERONNE
DIEPPE
AMIENS
ST. QUENTIN
CHARLEVILLE
MEZIERES
Aisne Canal
SEDAN
Oise R.
LAON
LE HAVRE
LUXEMBOURG
RETHEL
ROUEN
STENAY
MONTMEDY
Aisne R.
FRANCE
SAARBRUCKEN
Seine
REIMS
VERDUN
METZ
Marne
KARLSRUHE
PARIS
CHALONS
Meuse R.
River
NANCY
STRASBOURG
R.
MAY 14TH & 15TH
MAY 16TH & 17TH
MAY 18TH
MAY 19TH
MAY 20TH
0 10 20 30 40 50 60 70 80 90 100
SCALE IN MILES
N
Brown

Map 2

natural obstacle—the Meuse River. It may be presumed that the penetrating force was supplied with ample means for quickly effecting this crossing against whatever opposition, and maintaining sufficient bridges despite the utmost efforts of Allied air forces to close them. The severity of the Allied attacks against these bridges may be inferred from the following communiqués, which refer to the actions on May 13 and 14:

> Two permanent bridges and two pontoon bridges were destroyed, and at least 15 enemy aircraft were brought down. In the fury of these engagements . . . *our losses, which were not considered excessive, in view of the results obtained,* were 35 aircraft. Over 150 Allied aircraft took part. *Apart from the operation in the Sedan area, where success could not be achieved without casualty,* the balance of aircraft losses remain heavily in Allied favor.—*British Air Ministry.*

> Total losses of the opponent on May 14 amounted to more than 200 planes of which 170 were shot down in air fights. More than 70 British and French planes were shot down at one point alone. Thirty-five of our own planes are missing. —*German High Command.*

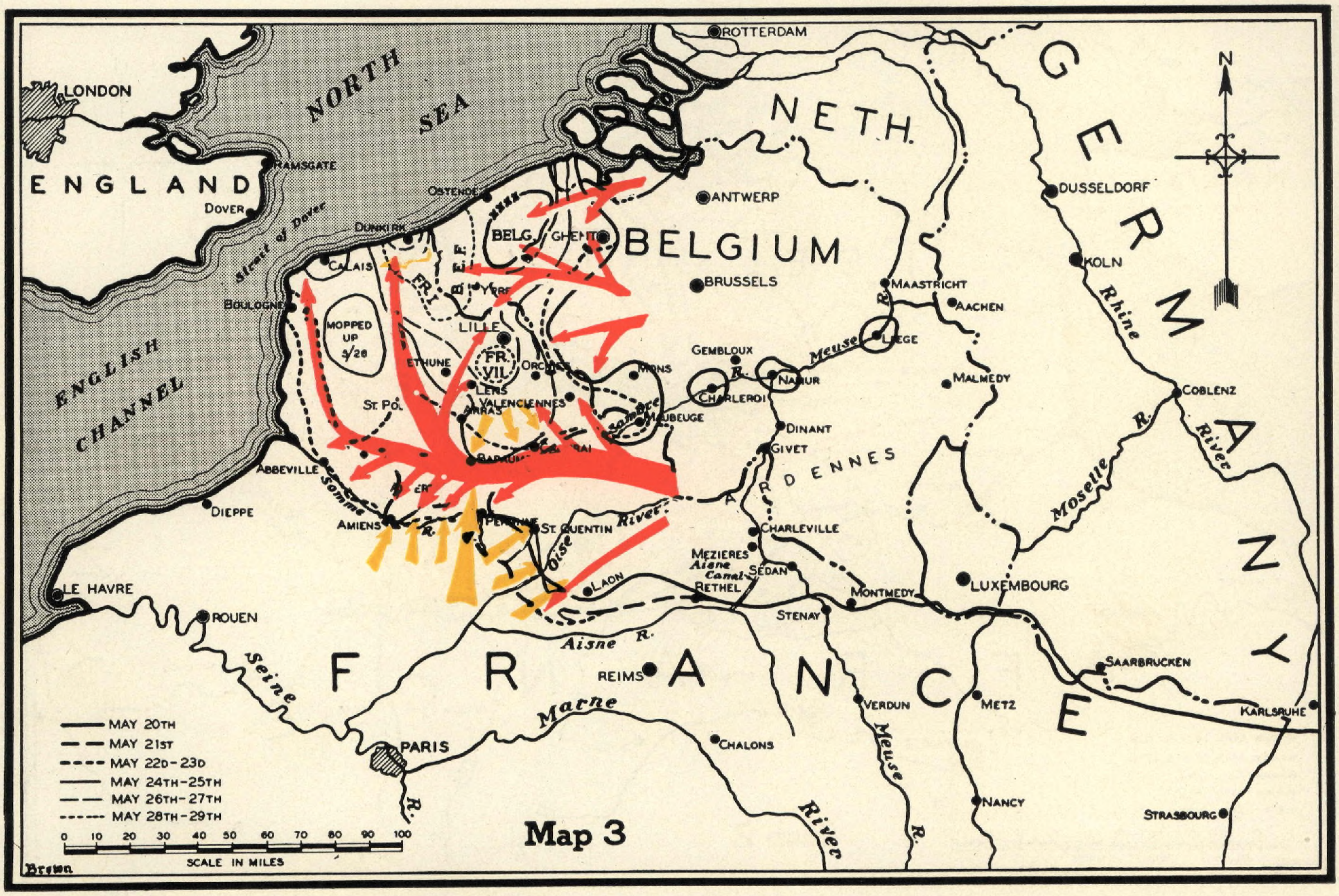
When the German High Command admits the loss of thirty-five planes missing in one day it is probable that the actual losses were closer to 100. We may be sure that an epic air battle was fought over the Meuse. Beyond the Meuse the principal penetration was directed throughout its course entirely along high ground suitable for the operations of mechanized and motorized units. The swampy land along the Sambre, and the defensible east-west river lines to the south were attacked only in so far as necessary to protect the flanks of the principal penetration, pinch out fortified areas, maintain deception, or establish valuable points of departure for future operations.

(5) The left flank of the principal penetration was well protected by the secondary penetration up to Abbeville, and thereafter by the English Channel.

(6) The secondary penetration had little trouble in establishing a strong protective flank fulfilling all the necessary conditions. Most of the larger streams in this area run east and west and the intervening wooded ridges are ideal for defense. The line: Aisne River—Oise-Aisne Canal—Somme River, intercepted all communication between the main Allied reserve mass and the forces in Belgium and Northern France. The right flank of this defensive line could be turned only by crossing the wide swampy Somme estuary, or by a landing attack on the Norman coast.

(7) The Allies' communication system was systematically disrupted by aircraft and parachute troops. Additional impedance to Allied transport was afforded by the systematic bombing and machine-gunning of refugees. Particular attention was given from the very first day to all ports and railroad and road centers serving for the supply and reinforcement of the northern Allied armies.

(8) The one weakness of the plan lay in the vulnerability of the communications network available to the penetrating attack—particularly in the area: Valenciennes—St. Quentin—Arras. The strongly fortified Sambre Valley and the Somme—Aisne line converge toward the


NORTH SEA
ENGLAND
LONDON
RAMSGATE
DOVER
Strait of Dover
ENGLISH CHANNEL
NETH.
GERMANY
BELGIUM
FRANCE
ROTTERDAM
ANTWERP
OSTENDE
DUNKIRK
CALAIS
BOULOGNE
BELG.
GHENT
B.E.F.
FR. I
YPRES
LILLE
FR. VII
BETHUNE
ORCHIES
LENS
ARRAS
VALENCIENNES
MONS
MAUBEUGE
St. POL
BAPAUME
CAMBRAI
ALBERT
AMIENS
PERONNE
St. QUENTIN
ABBEVILLE
Somme
DIEPPE
LE HAVRE
ROUEN
Seine
PARIS
MOPPED UP 5/28
BRUSSELS
GEMBLOUX
CHARLEROI
NAMUR
DINANT
GIVET
MAASTRICHT
AACHEN
LIEGE
Meuse R.
MALMEDY
ARDENNES
CHARLEVILLE
MEZIERES
Aisne Canal
SEDAN
RETHEL
LAON
Oise
River
Aisne R.
REIMS
Marne
CHALONS
STENAY
MONTMEDY
LUXEMBOURG
VERDUN
Meuse R.
METZ
NANCY
River
SAARBRUCKEN
KARLSRUHE
STRASBOURG
DUSSELDORF
KOLN
Rhine
COBLENZ
Moselle R.
Rhine River
N
MAY 20TH
MAY 21ST
MAY 22D-23D
MAY 24TH-25TH
MAY 26TH-27TH
MAY 28TH-29TH
0 10 20 30 40 50 60 70 80 90 100
SCALE IN MILES
Brown

Map 3

west, with the narrowest point between Péronne and the fortified areas of Valenciennes and Maubeuge. By the time this narrow sector would be reached, the Allied northern armies could be expected to have become well concentrated, and would probably be counterattacking toward the south. The main Allied reserves would be coming up from Paris. Moreover, by that time the penetrating force would have lost materially in aircraft and tanks, and its combat power would be further reduced by fatigue and the exhaustion of ammunition and food supplies. The attack had to be planned to conserve its most powerful effort for the break-through at this point. In the event, the attack barely outstripped the defense. The most advanced mechanized spearheads had barely passed Arras and fanned out toward Amiens, Abbeville and St. Pol (map 3), when the French VII and IX Armies struck to the south between Cambrai and Arras, deflecting the German main route of advance to the south of the old Roman road from Cambrai to Arras. Instead of a gap of some forty miles, as planned, the penetration was forced to squeeze through a bottleneck of only eleven miles, between the Somme and Bapaume. The quadrangle: Arras—Cambrai—St. Quentin—Albert, was not a healthy area to be in between May 20 and 27.

After May 27, when pincer attacks northward through Vimy and westward through Orchies threatened encirclement of the large French force on the line: Valenciennes—Cambrai—Bapaume—Arras, the success of the double penetration maneuver was assured. The French VII and IX Armies retired toward the north, and Weygand's impending counterattack northward from Amiens—Péronne was abandoned.

The theory of the double penetration as I presented it in 1936 did not include consideration of the method to be used in accomplishing the final annihilation of the defender's isolated wing. The German solution seems to be to cut it up into segments by successive pincer movements, thus disrupting all communications and organization, and leaving each segment to be cut to pieces, or to surrender or starve.

Several explanations may be advanced for the failure of the principal penetration to prevent the escape of a large part of the isolated Allied force. Most important, perhaps, was the remarkable skill and resiliency of the Allied forces in rear-guard fighting. Time and again the Allies fought the Germans to a standstill, and then pulled out of a threatened double envelopment just in time: at Maubeuge—Valenciennes; at Arras—Cambrai—Bapaume; at Ghent; and at Ypres. The German westward attack north of Antwerp and Ghent was too slow, or had insufficient power. When the full story is known, the resistance of the Belgian Army in this area may prove to have been decisive in saving the port of Dunkirk to the Allies. It may be that by May 27 the Germans had suffered such tremendous losses in combat power that they had insufficient reserves to finish the job. Judged by the experience of our own tankers on maneuvers, most of the German tankers must have been dead at the wheel by that time, and a considerable number of vehicles must have been immobilized with minor mechanical troubles, or for lack of gas and ammunition. It may be that by May 27 the Germans were already withdrawing divisions for rest, reorganization and repair, preparatory to the drive along the Oise. Probably the truth includes all these factors.

With the ethics of invasion of the neutral countries, the question of responsibility for the initial break-through at the Meuse, the practicability of a French counterattack from the vicinity of Péronne, the cost to the Germans in casualties, planes and tanks, or the numbers of Allied troops saved in the unforgettable retreat, this article is not concerned. The important thing to be considered is that a complete penetration was effected, and that the isolated wing was eliminated as an effective combat force—a large part for the duration of the war, the remainder for several months at least. Considering tanks, trucks, and planes, as well as personnel, the effect, so far as the immediate strategic situation was concerned, was the same as though five or six Allied field armies had been destroyed.

During the battle of annihilation in Flanders, General Weygand was hurriedly regrouping, organizing a defense in depth along the Somme—Ailette—Aisne line, and instructing his forces in improvised tactics for countering the coming plane-tank-motor attack. There appears to have been little question that the next attack would be against the French, and that it would be launched without delay.

The French line was badly over-extended. Allied combat power was reduced by four or five field armies, not to mention disrupted communications and loss of the Little Maginot Line. Upon the reduced force fell the necessity of occupying and defending not only the additional frontage originally allocated to the lost armies, but the Italian frontier as well. It is probable that on June 5 when the blow fell, the combat power of the Germans between Abbeville and Montmedy was twice that of the French. And since the Germans possessed the initiative and superior mobility, this proportion could easily be made four to one at selected spots. The French simply lacked the power to prevent a break-through.

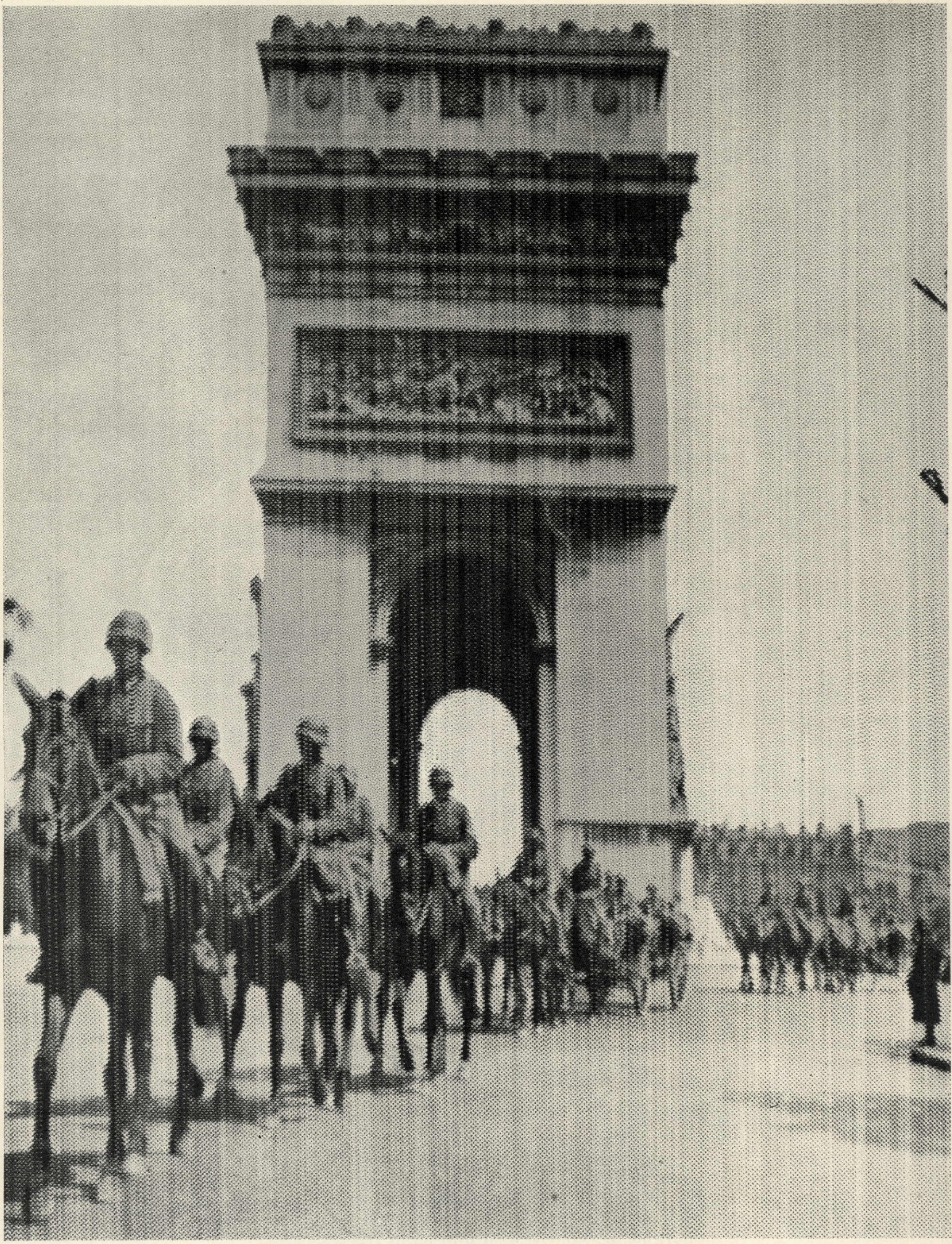
The Battle for France shows most of the characteristics of the double penetration. There is the secondary penetrating attack on June 5 to fix the Allied reserves. There is the holding attack in the difficult corridor between the Oise and the Ourcq. There is the widely divergent, and tremendously powerful principal penetration, launched on June 9 from the Aisne straight up the valleys of the Meuse, Marne, Aube, and Seine, toward Besançon and Dijon, to surround the Maginot Line. Owing to the overwhelming combat superiority of the attacker, however, it was not necessary to assign a defensive mission to the secondary penetration. This force possessed a sufficient superiority of combat power to engage in some surrounding and pursuing of its own. Instead of the double penetration visualized in the theory, this was a double envelopment, turned inside out.

The details of the Battle of France, like those of the Battle of Flanders, are obscure, because of the extreme rapidity of development and the particularly severe censorship on both sides. One would like to know how the gasoline and ammunition supply kept up with the advance; why Paris was abandoned; why Metz capitulated when Montmedy managed to hold out for six weeks. Particularly interesting are the questions of organization for stream-crossing by mechanized divisions, and the means by which the various arms were so perfectly coördinated in all operations. Most of these points will be clarified only after the war is ended.

One point emerges clearly: that the German armies had an overwhelming superiority in immediately available effective combat power. When fire-power was needed, it was on the spot ready to be used. Accounts by Allied survivors of Flanders abound in comments to the effect that they "never had a real go at Jerry." Of course not; they were never meant to. The whole show was designed for speed and overwhelming power. The Germans had both.

☆ ☆ ☆ ☆

"The power of striking like 'a bolt from the blue' is of the very greatest value in war. Surprise was the foundation of almost all the grand strategical combinations of the past as it will be of those to come. Surprise still is the most deadly of all weapons. 'Surprise is the deadliest of all foes.' "



Associated Press Photo

Germany's victorious army passing the Arc de Triomphe, Paris, France

CARDE

The New German Army Showing Organization of Panzer Divisions

By Lieutenant Colonel A. T. McAnsh

The German Army of today has radically changed its mode of warfare. No longer do great masses of men roll across a field toward an objective, hoping to take it by the sheer weight of numbers. This is outdated. Field operations differ greatly from those of the last war.

ORGANIZATION OF DIVISIONS

The divisions of the German Army are organized as light mechanized, heavy mechanized, infantry, motorized and mountain units.

The light mechanized divisions are composed of: Motorcycle infantry and machine guns, armored cars, light tanks (carried in trucks), horse cavalry, horse artillery (light) and artillery (in trucks).

A heavy mechanized ("Panzer") division is a mechanized force of all arms, approximately 14,000 men strong, with some 3,000 motor vehicles of all types. The Panzer division is in no sense a motorized infantry division of the present type in our Army. It is more nearly the equivalent of a pre-war cavalry division which the advance of science has permitted to be mechanized. The division is built for speed. Hard hitting qualities are sacrificed to achieve this purpose. The Panzer division is organized in three echelons:

A reconnaissance echelon, organized as a motorized reconnaissance battalion with 50 armored cars, a motorcycle infantry company, and supporting weapons.

A shock echelon organized as a tank brigade with some 450 tanks.

A ground holding echelon organized as a motorized infantry brigade, with two motorized infantry battalions in armored cars, one motorcycle battalion, one medium howitzer artillery regiment, and appropriate engineers, anti-tank units and signal troops.

The motorized division is organized identically with the horse and foot divisions, with the exception that it contains one organic mechanized reconnaissance battalion. Unlike our motorized division, the German motorized division is provided with one-ton half track vehicles serving the heavy infantry weapons, the heavy machine guns, mortars, infantry howitzers and anti-tank guns. These so-called "lilliput" tractors have an extremely low silhouette, a maximum road speed of 60 kilometers an hour and great cross-country mobility. They accompany the infantry in combat in the same manner as the horse-drawn vehicles operate in the infantry division. Thus the motorized division not only has strategic mobility, but its tactical mobility on the battlefield is maintained through its heavy weapon carriers.

Recently motorized and mechanized divisions have been organized into a mechanized corps consisting of two mechanized divisions and a motorized infantry division.

It might be well here to mention the difference between mechanized and motorized troops. Mechanized troops are infantry, artillery and cavalry, which use motorized matériel in battle. Motorized troops are infantry, artillery and cavalry which use motor transport to get them to the field of battle, but which, once there, fight as in the days before the advent of the gas engine.

PANZER DIVISIONS

Three-quarters of the German tanks are organized in the Panzer and light mechanized divisions. The remainder are formed into a number of GHQ tank regiments for close infantry support.

Finally, the organization of the basic infantry division, comprising by far the greater part of the Army:

1 Infantry brigade of 3 regiments.
1 Light artillery regiment.
1 Divisional reconnaissance unit.
1 Anti-tank battalion.
1 Antiaircraft group.
1 Pioneer battalion.
1 Signal battalion.
And administrative services.

The full establishment of the division is about 12,000 men.

The infantry regiment is composed of:
Headquarters.
3 Infantry battalions.
1 Intelligence section.
1 Cavalry section.
1 Heavy weapons company.
1 Anti-tank company.
1 Ammunition column.

An infantry battalion consists of:
3 Rifle companies.
A heavy weapons company.
1 Reconnaissance section.
1 Signal section.

A battalion heavy weapons company consists of:
3 Platoons with 12 heavy machine guns and 6 81-mm. mortars.

A rifle company of 190 men consists of:
3 Platoons, each consisting of 4 squads with 4 light machine guns and one light mortar, in addition to rifles.

A squad consists of:
10 men, 3 to serve a light machine gun, 1 to carry am-

A German medium tank halted in the square of a small Polish town in the Corridor. The tank is armed with a short barrel 75-mm. gun especially designed to be mounted in tanks.

munition, and 6 riflemen. Rifles are of the bolt action type.

The regimental heavy weapons company contains:

2 150-mm. howitzers.

6 80-mm. mortars.

6 Light grenade throwers.

The regimental anti-tank company consists of:

3 Platoons with 12 37-mm. guns.

The regimental cavalry section consists of:

1 Officer and 29 mounted men for patrol duty.

In addition to the above, each company has a squad of trained engineers and a sufficient number of trained signal men.

THE ARTILLERY REGIMENT

The artillery regiment consists of:

3 Battalions of 105-mm. howitzers.

1 Battalion of 150-mm. howitzers.

Each battalion consisting of 3 batteries of 4 guns each.

The anti-tank battalion consists of:

3 companies of 13 guns each, total 36.

In addition, in the field, a company of 20-mm. antiaircraft guns is added to the anti-tank battalion.

One point worthy of mention is the great emphasis on anti-tank guns. Each infantry regiment possesses a company of 12 37-mm. A.T. guns. Each division has a battalion of 36 A.T. guns. This gives a total of 72 within the division, in addition to a great number of GHQ battalions. This A.T. armament is the heaviest of any army in the world.

The German machine gun is now an air-cooled weapon. It serves both as a light and heavy machine gun, the only difference being that the light machine gun has a bipod mount, and the heavy machine gun a tripod.

Heavy artillery and chemical warfare units are assigned to corps and army headquarters, and are incorporated according to needs.

AIR CORPS

Some of the standard models of the German Air Corps are: The Heinkel He 112 Single-seat fighter, 1,150 h.p. Daimler-Benz DB. 601A motor.

Dimensions: Span 29 feet 10 inches; length 29 feet 7 inches; wing area 183 square feet.

Weights: Empty, 4,200 pounds; pilot, 200 pounds; radio, 44 pounds; fuel, normal range, 126 gallons, 943 pounds; oil, 88 pounds, armament, oxygen, etc., 265 pounds; disposable load, 1,540 pounds; normal loaded weight, 5,740 pounds; overloaded weight, 6,490 pounds.

Loadings: At normal loaded weight. Wing, 31.4 pounds per square foot; power, 4.98 pounds per h.p.; span, 6.45 pounds per square foot.

Performance: Maximum speed, 358 m.p.h. at 12,300 feet; cruising speed, 282 m.p.h. at 13,120 feet; stalling speed, 90 m.p.h.; initial rate of climb, 2,760 feet per minute; time to rated height (13,120 feet), 5 minutes; service ceiling, 31,170 feet; duration (normal at 282 m.p.h.), 2.65 hours; range, 715 miles; duration overloaded at 236 m.p.h., 6.85 hours; range, 1,555 miles.

Reconnaissance bombers of the German Air Force: The

Heinkel He 111K. Mk 111 (two 1,050 h.p. Daimler-Benz 600s): Span, 74 feet 3 inches. Length, 57 feet 9 inches. Top speed (dust bin extended), 236 m.p.h. at 13,100 feet. Service ceiling, 31,000 feet. Crew, 4. Three movable machine guns. Retractable dust bin underneath fuselage.

The Junkers JU88K (two 1,200 h.p. Junkers Jumo 211s): Span, 56 feet. Length 47 feet 7 inches. Top speed, 317 m.p.h. at 15,600 feet. Crew, 3 or 4. Three movable machine guns.

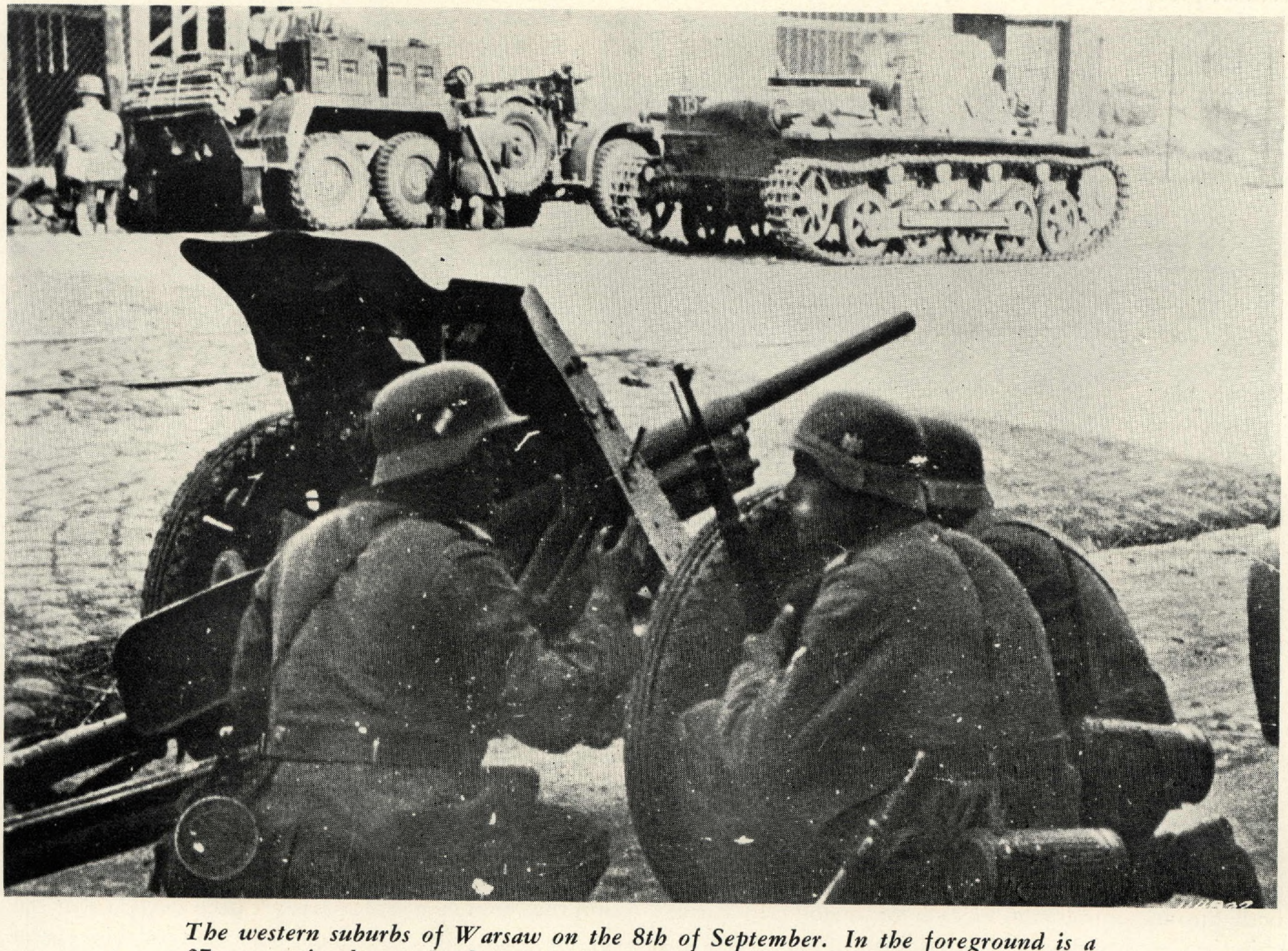
The Henschel Hs 126 (one 880 h.p. BMW 132 Dc): Span, 47 feet 7 inches. Length, 35 feet 7 inches. Top speed, 221 m.p.h. at 9,850 feet. Service ceiling, 28,000 feet. Crew, 2. One fixed, one movable machine gun.

The Junkers Ju 87 (one 1,200 h.p. Junkers Jumo 211): Span, 45 feet, 4 inches. Length, 35 feet 6 inches. Top speed, 242 m.p.h. at 14,000 feet. Service ceiling, 27,000 feet. Crew, 2. Two fixed, one movable machine guns.

The level of training in both Army and Air Force is considered high, despite the inevitable difficulties consequent to rapid numerical expansion of both forces. Very little emphasis has been placed in the Army on either administration or housekeeping. The quartermaster, paymaster, and regimental business officers have a standing in the German Army that would seem strange to American soldiers. Regular officers, the Germans say, should bend all their energies to fighting. "Beamers" or civic officials, therefore, are admitted to the Army for administrative work, such as bookkeeping and other business details. They rank as officers, but are considered officials. High commanders devote the bulk of their time and energy in supervising troop training.

OFFENSIVE DOCTRINE

The traditional German tactical doctrines of the offensive have persisted from World War days through the Reichswehr to the new Army. In the General Staff school, nine tactical problems in offensive action are given for every one dealing with a defensive situation. To achieve the tactical initiative under any and all circumstances



The western suburbs of Warsaw on the 8th of September. In the foreground is a 37-mm. antitank gun. In the upper right background is a light tank which is believed to be one of the typical command tanks of the German Army. This type of tank has a particularly large superstructure and is armed with only a single machine gun. It carries four officers and men. In the upper left background is a Krupp aircooled prime mover such as is used in the German Army to tow 37-mm. antitank guns. The unusual feature of this truck is its aircooling system. This is an older type vehicle designed in 1935 or 1936. It is driven on all four rear wheels.

could well be held to be a German maxim, even if thereby the risk of piece-meal attacks, of stumbling into ambushes, and of exposing flanks is accepted as a regrettable corollary.

Much thought has been given to the advisability of utilizing in open warfare tactical units smaller than the division. Many officers had urged that a smaller division be introduced. This suggestion, however, has been rejected. Instead, the idea had taken hold that the reinforced regiment was the logical tactical unit in open warfare and that when not encountering fixed resistance, the division should play much the same rôle as the corps had previously done. In consequence, the entire Army has been trained to march and fight as reinforced regiments.

In general, the infantry divisions attack on broad fronts, each division within the corps being assigned a zone of action and an objective. Within the division zone of action the advance is conducted by reinforced regiments.

This reinforced regiment is known as the basic "march combat group" in the German Army, and is a result of war experience on many fronts. It consists of one regiment of infantry with one battalion of light field howitzers attached and with such other divisional troops, signal, engineering, anti-tank and artillery as the situation demands. The strength of this unit usually aggregates about four thousand officers and men. The formidable striking power of the march combat can be realized by a glance at the equipment with which the infantry regiment is provided. It contains organically 81 light machine guns, 42 heavy machine guns, 27 light mortars, 24 heavy mortars, 12 37-mm. anti-tank guns, 6 75-mm. howitzers, and two 150-mm. infantry howitzers. When to this armament is added a battalion of 12 105-mm. light field howitzers and often a battery of 150-mm. heavy howitzers, it attains a fire power of no mean proportions.

In the tactical employment of the German division, the march combat group is retained until enemy resistance necessitates employment of the division as a whole, when all attached troops immediately revert to divisional control. This is particularly true of the artillery which is almost invariably employed under direct control of the artillery commander once the division is committed to coordinated action.

RESPONSIBILITY AND LEADERSHIP

German tactical doctrine and training stress the responsibility for individual leadership and initiative of subordinate commanders. Each combat group from the basic group squad up, is organized and armed to provide for both fire and movement in each command. In battle, objectives are assigned and subordinate troop leaders accomplish their individual tactical missions with a minimum of interference from higher commanders. Written orders in the division are rare. It is to this tactical doctrine and training that the extraordinary speed of the recent German attacks are largely atributed.

Before mentioning the mechanized divisions in detail, it should be remembered that the number of these divisions is low compared to the total number of divisions in the German Army, and that it is the regular foot divisions which bear the brunt of the attack. Like the backfield of a football team, it is the Air Corps and the mechanized troops which receive the publicity, but like the line, it is the regular divisions who roll back the enemy and drive them into isolated groups where they are surrounded and destroyed.

While the infantry divisions bear the brunt of the fighting, the mechanized and motorized units are employed on *cavalry missions,* both by exploiting the breakthrough and by attacks around the flanks to gain the hostile rear, disrupt their communications, prevent their taking up delaying positions, and so cut off their retreat to their final defensive line.

MECHANIZED DIVISIONS

These mechanized divisions work in close coöperation with the Air Corps and operate far in advance of the infantry. These divisions contain organically sufficient reconnaissance and security troops to seize and occupy terrain features along the route of advance and sufficient infantry and artillery to occupy ground taken by the tanks. In the tank units themselves, close artillery support is furnished by the medium tanks armed with either the 37-mm. gun or the 75-mm. gun, and having the same speed and maneuverability as the light tank. Each mechanized and motorized division has a motorized reconnaissance battalion. These lead the way. When anti-tank barriers are encountered, the motorcycle company supported by the infantry howitzers of the heavy company clears the advance for the armored cars. This motorized reconnaissance battalion is composed of an armored car company, a motorcycle company, and a heavy weapons company.

In addition to these motorized reconnaissance battalions with the mechanized divisions, the German Army has a corps cavalry reconnaissance regiment for close-in reconnaissance with the infantry divisions. These divisions, composed of a battalion, horsed, a bicycle battalion and a heavy battalion containing the supporting weapons, signal and engineering platoons, are so organized that they can be split three ways to furnish reconnaissance detachments to the division of the corps. In addition to this division reconnaissance detachment, each infantry regiment, as already mentioned, has its mounted platoon of one officer and 29 men. The Germans lay great stress on the use of horsemen and bicyclists for reconnaissance on the immediate front and flanks of advancing troops, and claim that no motor vehicle has yet been devised that can take the place of the individual horseman for this type of work. A great deal of publicity has been given recently to the new type of warfare advocated by Germany.

"Blitzkrieg" or lightning war is not a term for just any kind of quickly waged and violent war. It is a name for a special kind of quickly waged and violent war which has a technique of its own. The ideas which lie back of this

A German tank unit halted in a village during the Corridor operation. In the background at the upper right is a heavy German armored car of the 8-wheel type. This armored car is armed with a 20-mm. machine gun and one of standard caliber.

technique began taking shape in Germany in the period after the failure of either the Allies or the Germans to break through on the Western Front during 1915 and 1916, and they matured after the outbreak of the civil war in Spain.

While some of the guiding concepts of the blitzkrieg were tried out in Ethiopia, the results were not considered conclusive. The Ethiopians were a semi-savage people, and they lacked the modern armament and equipment necessary to offer the Italian invaders the kind of resistance essential if Blitzkrieg were to receive a real and complete battlefield test. But Spain furnished a fine proving ground. Then Albania was a dress rehearsal. And in Poland the system was put to the final proof.

The technique of Blitzkrieg is based on the principle of surprise as opposed to an effort to crush an enemy by bringing an overwhelming superiority in numbers and armament against him. It can be likened to the swift and deadly thrust of a rapier as opposed to the crushing blow of a battle axe or a war club. The objective is not the enemy civilian population but the enemy armed forces, both ground and air.

From the days of earliest military history, surprise has played a prominent part in winning victory. When coupled with better tactics—that is, superior methods of combat on the battlefield—surprise has always given victory against an enemy that relies on superior numbers and courage.

THE DOUHET DOCTRINE

Soldiers have long studied the problems involved in breaking through a relatively short front when there is a dense population in the rear trained and ready to come to arms within a few days. Some believers in the growing power of aviation argued that the airplane provided the answer. Airplanes would bomb the civilian population and so shatter their morale that whether or not the nation had been trained in universal military service it would sue for peace even before its army had been beaten in battle.

General Guilio Douhet's name has been erroneously attached to this idea. What he advocated was the preparation in time of peace of a large aviation force which, when war comes, will be ready to take off into enemy country without delay. Its objective would not be the civilian population, but the things used by a country first to mobilize and then to concentrate its war strength. "Mobilization" is calling to colors the civilians who form the trained reserve. This takes time. "Concentration" is moving the units of the army, after they have been raised to war strength, from the places of local assembly—by rail, ship, bus and on foot—to the localities where they are to commence fighting. This also takes time. Thus the essential in each of the two processes needed to bring even the most modern, up-to-date army to the point where it can become effective is *time*.

But a large aviation force, prepared in advance, needs no time in order to become effective. It already is mobilized and concentrated. It can start immediately for its goal. From this fact there followed a logical deduction. Why not use an air force against those means which an enemy uses, first to mobilize his troops and then to concentrate them? The means in question consist of barracks, stables, gun sheds, arsenals, railways, railway stations, bridges, ships, docks, electric light plants and power plants of all kind. As Douhet conceived it, aviation would be used to make a surprise attack; but the surprise would not be in respect to the places attacked but in respect to the moment of the attack.

AVIATION IN SPAIN

In Spain aviation played a rôle which few had foreseen in advance. Such reliable evidence as exists that bombing of civilian populations did not produce results worth the risk to planes and pilots, particularly where modern antiaircraft fire had to be faced. Bombing of important military objectives far in the rear, in accordance with Douhet's theory, while producing considerable damage, was never decisive. This was due to the fact that since airplanes are unable to capture (i.e., occupy) and hold territory, they could not prevent the enemy from renewing activity in the localities which had been bombed as soon as the bombing ceased. Also, due to lack of accuracy in bombing and an ability to keep up the bombing incessantly, the destruction accomplished was never total.

The operations in the final period of warfare in Spain fall into two categories—hard-fought, knock-down and drag-out battles; and pursuits. Teruel, Alhambra, Sar-

A column of Pomeranian troops of the 32d Division advancing in the Corridor during the first week of September. In the right foreground is a 37-mm. antitank gun being hauled behind a standard command car.

rion, Ebro and Segro belong in the first class. The separate operations leading up to the advance on and capture of Castellon-de-la-Plana consisted of a series of stubborn small battles fought along a wide front. The operations after Alhambra, terminated only when Franco reached the Segro and Ebro Rivers and the Mediterranean at Vinaroz, were a large-scale pursuit. It terminated only when the remnants of the governmental armies were driven across the French frontier.

Horses and Mules

The results showed that weapons and tactics essential in one of the two categories of fighting were frequently of little use in the other. In a hard-fought battle the ability to give and take hard blows proved to be absolutely necessary. Speed at the sacrifice of this ability introduced dangers which frequently led to defeat. Therefore artillery with first-class fire power, heavily armed infantry, armored tanks with cannon and huge quantities of ammunition were required or else defeat was certain. Similarly, the ability of such troops and their supplies to move fast was entirely subordinate to their ability to march and fight regardless of the difficulties of terrain. Therefore, while motor transports and mechanized heavy artillery and tanks were used wherever the ground permitted, the troops as a whole depended upon horses, mules and donkeys.

For pursuit, on the other hand, the primary requisite was speed, in combination with enough combat power to overcome whatever minor resistance rear guards and the braver elements of defeated troops might put up. The elements that produced the best results were light speedy tanks armed with machine guns, armored cars and motorcycle infantry where the terrain permitted their use; on other terrains, horse cavalry was needed. All this had to be backed up by infantry and by artillery carried in motor trucks where that was possible; in other cases infantry had to march. As the pursuit continued, the infantry would be more and more outdistanced until it was as much as several days in the rear.

In battle and pursuit, the rôle played by the Spanish, Italian and German aviation was so important that we were safe in saying that in battle where two sides are equal in everything but aviation, the side which possesses it and uses it as it was used in Spain will win.

In heavy combat, as the preparatory artillery fire ceased, heavy bombing planes bombed and re-bombed the enemy positions from one end to the other. This was followed, during the advance of the attacking infantry and tanks, by continuous diving attacks and light bombing and machine gunning of the enemy positions by the assault aviation. For pursuit, airplanes bombed and machine gunned retreating enemy elements far to the rear. Their bombs and heavy machine guns also furnished the light mechanized and horse cavalry with the high-explosive and heavy machine gun fire which their artillery and heavy machine guns frequently could not provide because they were unable to keep up. In other words, this support from the aviation prevented the artillery and heavy machine guns of the enemy's rear guard from holding up the light mechanized forces and horse cavalry, which would have given the main enemy forces a chance to retreat in order to organize a new defensive position.

The Test of Battle

Thus in the one real test that of battle, the Spanish war proved: 1, that the children of the gas engine could not accomplish decisive results alone; 2, that in heavy combat, while their support is essential, they are subordinate to the infantry and artillery, as the speed cannot compensate for their inability (unlike the infantry and artillery) to take and give heavy blows; and 3, that for pursuit, or against an enemy lacking the artillery of various types and the tanks and aviation necessary for successful defense, light and mechanized forces supported by aviation can strike surprise blows which may prove decisive.

With the acceptance by the German High Commands and General Staff of the accuracy of this third conclusion, the following reorganization and rearmament of armed forces accordingly, the long evolution of the theory of Blitzkrieg was over. It was ready for use as a well-rounded conception of military strategy.

It is important to note the difference between the third and the second conclusions just recorded. The third lies at the basis of the idea of Blitzkrieg; the second indicates conditions under which it could not work and therefore should not be tried.

The Blitzkrieg would not be tried against the Maginot Line. Not, probably, would it be tried against an enemy with a strong air force and numerous large-caliber anti-aircraft and anti-tank guns—in other words, an enemy prepared not only to engage in hard combat against infantry and artillery but also against tanks, armored cars and aviation.

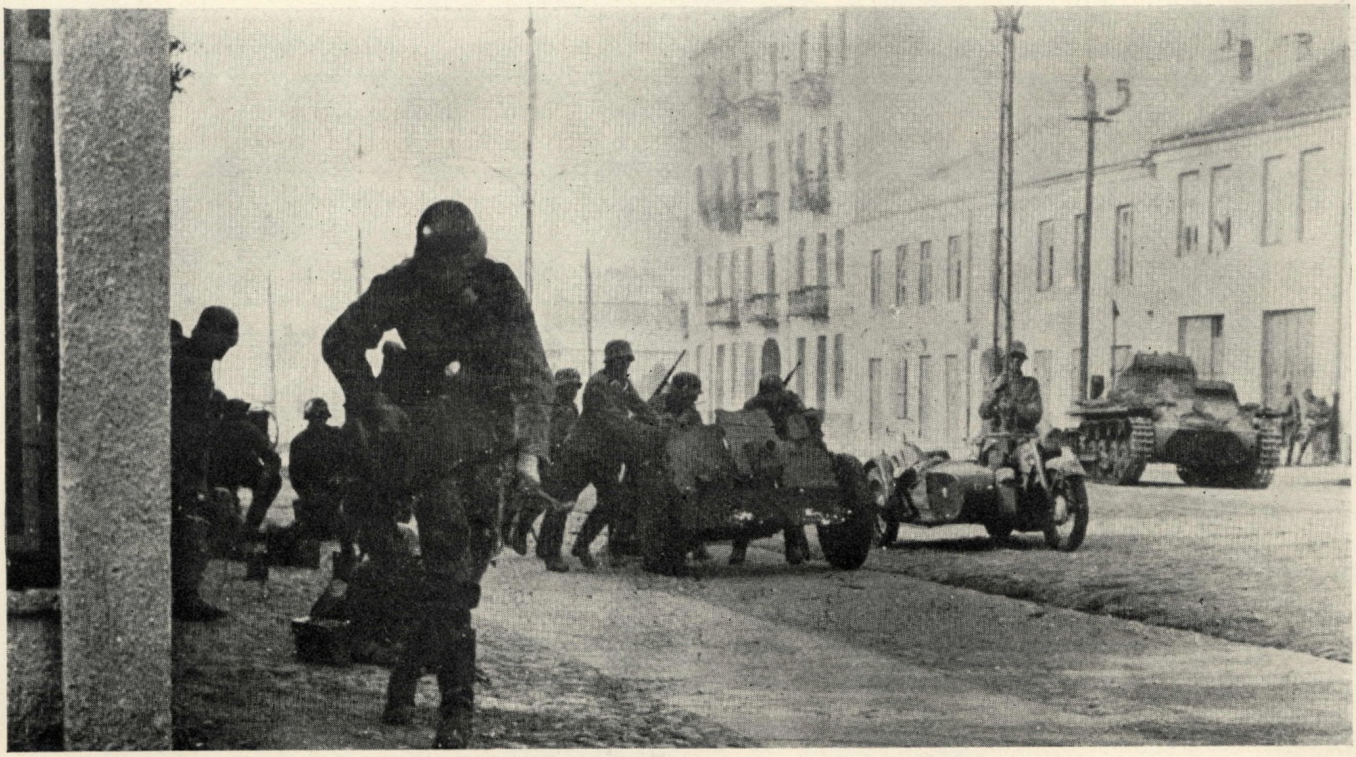
Blitzkrieg

The Blitzkrieg technique, as exemplified so successfully in Europe, follows certain well-defined successive steps:

1. An airplane attack is made on all enemy aviation and airdromes.

2. An airplane attack is made on all railway junctions and stations, barracks, depots, bridges, and motor convoys on roads—that is, everything used by an army for mobilization and concentration. (If the aviation is large enough it carries out 1 and 2 simultaneously.)

3. While this is going on, the artillery of all calibers which already is in place near the border heavily shells all the enemy batteries, trenches and other works, while the regular infantry assaults and takes them. Heavy bombing and light diving bombing and machine gunning by airplanes assist this preparation. These operations by the troops armed and trained for hard combat open the way for the Blitzkrieg troops. Of course, if there are no minor fortifications or organized resistance of any kind at the frontier, this step is not necessary. In those circumstances



The western suburbs of Warsaw on September 8 or September 9. An infantry 75-mm. howitzer is being brought into position. This weapon is a part of the equipment of the motorized rifle brigade of a Panzer Division. This is indicated by the fact that it is provided with heavy rubber tires in order to make it suitable for being towed behind a truck. The normal infantry howitzers are not so provided as they are designed to be drawn by horses. In the right background there is a light infantry tank. There has been included in the picture a standard German motorcycle with sidecar, such as are provided for messenger service in all units.

the Blitzkrieg troops start their invasion directly after steps 1 and 2 have been executed.

4. The light divisions made up of motorcycle infantry and machine guns, armored cars, light tanks (carried in trucks), horse cavalry, and sometimes horse artillery (light) and artillery carried in trucks, lead the way.

5. After the light divisions come the armored divisions, each composed of about 400 tanks (generally medium-sized), motorized infantry, artillery, anti-tank and anti-aircraft artillery and engineers. The light and armored divisions are closely supported by aviation, which is ready at all times with heavy bombing planes and diving light bombing, and machine gun planes to help overcome any enemy resistance.

6. Next come infantry and artillery in motor trucks. Reliable reports indicate that Germany has at least four regularly organized air regiments, each consisting of a fully equipped and armed regiment of infantry, with the transport planes necessary to fly them all at one and the same time. The purpose of these is to reinforce quickly the light and armored divisions should they meet with more resistance than they can overcome with their aviation support. The troops would not be landed by parachute in the rear of the enemy, a procedure few military men would care to sanction; troops so landed would probably be a present to the enemy. Instead, the airplanes land just out of enemy artillery range, in the rear of their own troops.

The Blitzkrieg troops do not attempt to engage in knock-down, drag-out combat with enemy troops prepared for this type of fighting. Instead, they go around the flanks, leaving the other job to the regular divisions which come plodding along in the rear.

CONCLUSIONS

In summing up the forces that comprise the German Army, it is well to reiterate:

1. Tanks and aviation, far from replacing ground troops in any way, simply added two more essentials to an up-to-date army.

2. The much publicized "Blitzkrieg" would not be tried against an enemy with a strong air force and numerous large-caliber antiaircraft and anti-tank guns.

3. The striking success of the German Army has been due, not to the development of any single arm, but to the stressing of sound tactics, sound training methods, and sound application of the principles of organization in a balanced army, with a balanced organization and balanced armament.

(NOTE: Comments on Blitzkrieg were taken from an article by Brigadier General Henry J. Reilly in *Foreign Affairs.* Data from German Aircraft from *Command and General Staff Quarterly.* Article courtesy *The Illinois Guardsman.)*

Cavalry Clarified

Having been on duty recently with the Organized Reserve Component, and having had close association with the National Guard and Regular Army Components, your editor deems it appropriate and advisable to clarify the definition of cavalry—this, for the benefit of all who still visualize cavalry solely as the *horse*. Let us get this straight and pass it around. *Cavalry should not be identified by the mode of travel, but by the missions which it is intended to accomplish.* The tactical principles have not changed with modern developments. It is the *methods* of cavalry that constantly are undergoing improvement affecting mainly the factors of time and space, armor and armament.

When the army advances to battle some mobile group, for the "mass," must perform those time-honored ground missions involving reconnaissance, security, offensive and defensive combat, exploitation, covering, or pursuit operations. Whether the horse—in saddle or pack, camel, elephant, the motorcycle, scout car, armored car, combat car, truck or portee trailer is used (any or all) is merely a means to the end of accomplishing cavalry missions. Whether it be by horse cavalry, mechanized cavalry, or both, getting the cavalry job done is the main idea—call it what one may.

Let us not be hidebound to terminology. The terrain, time element, and opposition indicates the mode of travel; the specific situation indicates the required type of combat. The respective equipment and organization should meet this requirement.

The catch phrase "Blitzkrieg," which seems to have captured popular civilian fancy, is not new to cavalrymen. Initial Blitzkrieg tactics are normal cavalry tactics on a large scale. Modern warfare emphasizes the need of well-balanced combat teams. Neither cavalry nor infantry can advance now without the proportionate supporting assistance of all of the other arms and services. For cavalry, highly mobile engineer and artillery support is essential. Combat aviation in support of cavalry has entered a new phase of importance. Effective coördinated teamplay, however, can be obtained only by actual practice in the development of technique. We must pull together without prejudice. But that group, which initially precedes the infantry mass must and does perform cavalry missions.

In the present army expansion and in the organization of corps for service test along the general lines of the German Panzer divisions the Chief of Staff obviously appreciated this reasoning by the designation of Brigadier General Adna R. Chaffee to command the first completely mechanized army corps; and Brigadier General Charles L. Scott to command the Second Armored Division. The paramount consideration is to have leaders of vision who can think in terms of *cavalry missions*. This is true, also, for all cavalry leaders down to and including the platoon—that little efficient cog without which the big machine cannot function.

Cavalry leaders in a war of movement are more essential today than ever before in our history.

The cavalry mission is the thing. Forward, Cavalry!

Experiences in the Polish Campaign*

Staff Sergeant Ziegler discusses his experiences in the operations south of Warsaw:

On September 9 the division of which Ziegler was a member was southwest of Warsaw awaiting orders to attack the city. Reports from the air observers indicated that the entrances to the city were barricaded. The tanks had spent the preceding night in a *hedge-hog* formation; that is an octagonal group facing out to give all-round protection. The men were nervous and full of fear from imagined dangers; as a result no one got much sleep.

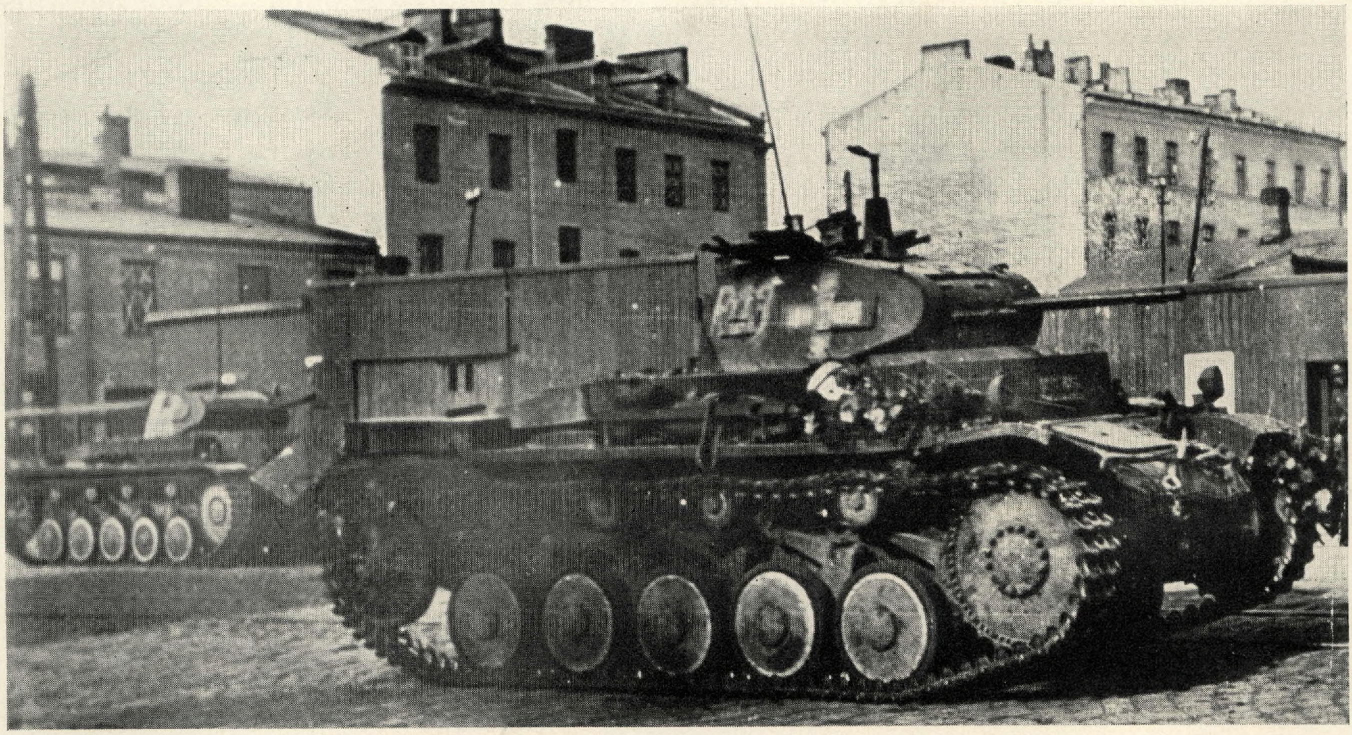
Ziegler was in command of the headquarters tanks of his company, evidently a light tank with three men in the crew including himself. The other two men were the driver and the radio operator. His three tanks were supposed to protect the company commander, perform reconnaissance, and maintain liaison with the combat sections.

At 6 AM the company formed for the attack. Nervousness still persisted, unallayed by the heavy hostile artillery fire passing overhead. The order to attack came by radio, and as they approached the city, small arms fire rattled on the outside of the tank. The leading section leader was held up by stoppages in his weapons, which he reported by radio. The company commander ordered the next section to pass through and take up the lead. This section was stopped by a minefield; the attack seemed stalled.

At this point Sergeant Ziegler lost his nervousness and felt a fighting spirit come over him. With the permission of the company commander he took charge of the remnants of the leading sections; ordering them to follow him he moved forward under heavy rifle and machine gun fire, through hedges, fences, gardens, summer houses, and crossed the first streets. Here the Poles had been entrenched, but were fleeing in dismay when they saw that their minefields had not stopped the German tanks.

Other Poles in buildings were firing heavily on the tanks. Ziegler kept in touch with the C.O. by radio, and kept moving on from hedge to hedge. When he had time to look back he saw that no other tanks were following him except that of the C.O., about 30 yards to the rear. An antitank rifle shattered the prism in the driver's vision slit. They stopped to install a new prism, meanwhile Ziegler was revolving his turret and looking for targets. He saw that he was now alone, although three other tanks had stopped some 30 yards away. His machine gun jammed. With sweat pouring from his face he started to change barrels, when he saw a Polish civilian run forward and throw a grenade at his tank. As the Pole started to throw another, a round fired from the 37-mm. gun blew him to pieces. Then Ziegler got his machine gun going at fifty Poles who were jumping from a railroad embankment.

The radio operator switched to the battalion frequency and received an order for Ziegler to take command of the company and lead it forward. Two other light and one medium tank came forward. They moved forward into



Light tanks of a newer type in the streets of Warsaw, September 9. Both are armed with two machine guns, one of standard caliber and the other of 20-mm. caliber. The tank periscope should be noted. This type of tank appeared for the first time in the equipment of the German Army in 1937.

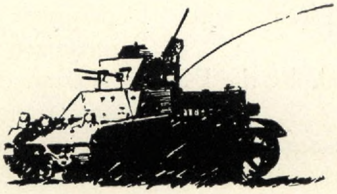
---

*Extracts from *Die Panzertruppe,* November, 1939: (A digest).

the streets and rolled toward the center of Warsaw. A 75-mm. gun fired at them from a garden. Ziegler replied with his machine gun, used up a magazine full, but the Poles fled with their gun.

They passed through a barrier one tank at a time, the other giving covering fire. As soon as they were through the barrier the 75-mm. gun opened on him again. Ziegler replied with rapid fire. While changing magazines he looked out and saw that both his light tanks were in flames. He ordered the medium tank to turn and follow him back. At that moment the medium tank was hit by a 37-mm. shell. Fortunately for him one of the smoke candles which are fastened to the rear of the tanks broke away from one of the burning tanks and covered his retreat. One shell went under his tank, damaging the under carriage. As the last remaining other tank had disappeared he turned and withdrew at full speed through the smoke of burning tanks. Although expecting his finish at any moment he reached the gardens where there was only rifle and machine gun fire. He took into his tank three survivors from the burning tanks, who had hidden in the bushes. After breaking through a strong iron gate his tank managed to reach a main road, where he found more tanks of his battalion. By this time his turret was jammed from some injury.

He now saw his company commander fighting on foot with a pistol, being fired on from surrounding houses. He rescued him also. With these survivors he made his way back to safety. The fight had lasted five hours, and they had been driven out of the city.



CARDED

Organization of New American Armored Corps

The new Armored Corps, comprising the trained personnel of Infantry and Cavalry tank and combat car units, will consist of all Infantry tank components except the 1st Battalion of the 67th Infantry Regiment at Ft. George G. Meade, Md., all mechanized Cavalry components now at Ft. Knox, Ky., and the 1st Combat Car Squadron now stationed at Ft. Riley, Kans. It will contain over 18,000 officers and enlisted men, and each division will be divided into five parts—the Command Echelon, the Reconnaissance Echelon, the Combat Echelon, the Support Echelon, and the Service Echelon.

Each division will contain approximately 700 armored vehicles, 300 guns and howitzers of various calibres, and over 6,500 automatic and semi-automatic weapons.

The Command Echelon will consist of the division headquarters and staff with Signal units.

The Reconnaissance Echelon will be made up of an air corps squadron and a reconnaissance battalion comprising two reconnaissance companies of scout cars, one light tank company, and one motorized rifle company.

The Combat Echelon, which is the striking force, will function under a brigadier general as part of the division. It will consist of two light armored regiments and one medium armored regiment, a motorized engineer battalion, and an armored field artillery regiment.

The Support Echelon will consist of a motorized rifle regiment of two battalions to act as a holding force, and a Field Artillery battalion of four batteries of howitzers and anti-tank guns.

The Service Echelon will be made up of one Ordnance maintenance company, one Quartermaster battalion, and one motorized Medical battalion.

In addition to this Corps of light and medium tanks, plans contemplate the creation of additional armored organizations as rapidly as matériel and personnel become available. The 1st Battalion of the 67th Infantry Regiment at Ft. George G. Meade, Md., and other units, principally of heavy tanks, to be organized at a later date, will be designated as GHQ Reserve Units. Their maintenance and development will be, for the present, a responsibility of the Armored Field Force Commander.

The separation from the Cavalry and the Infantry of these mechanized units does not affect in any way the status of the 4th and 6th Regiments of Cavalry, containing many motor elements, which are reconnaissance regiments assigned to Infantry Corps, or of the Mechanized elements of Cavalry and Infantry divisions, and separate regiments.

It is understood that none of the Armored Force units will be freed from duties with the Corps for participation in any of the Four Army exercises this summer. It is considered that while such training would be highly desirable for the other participants the loss to the Armored Divisions in their effort to get organized and trained as rapidly as possible would be too great.

The 7th Cavalry Brigade in the Third Army Maneuvers[*]

"It is appreciated that, as stated by control authorities in the final critique, the main objective of the maneuvers was the testing of the IV Corps of three triangular divisions. To do this the IX Corps was formed of three remaining powerful units, all of dissimilar characteristics, and the missions given the IX Corps while the 7th Cavalry Brigade was attached to it were all essentially defensive.

"A Mechanized Brigade or armored division is essentially an instrument for the offensive. Its holding power is both limited and temporary. When on defense it holds with only a small fraction and counterattacks locally with its mobile elements.

"Virtually all missions given to the Brigade by the IX Corps were executed in this maneuver.

"Under the circumstances of the Corps organization and mission I believe the Brigade was correctly employed. Had the Corps possessed two infantry divisions capable of a sustained attack on a broader front, I would have preferred to see the brigade swing wider to the flank to strike in a more rearward direction.

"Had the last exercise gone a further hour, and considering the difficulty of tank operation against Hutton and the great force which Blue had concentrated in that locality, I would have recommended that the Brigade be pulled out to the southwest and march by De Ridder towards Hineston to strike the Blue concentration from the rear before it could be untangled. Such a mission would have employed the mobility of the Brigade to give vital results.

"These were the best controlled large maneuvers which I have attended. I think the system was excellent. A few more control officers were needed, particularly at the point of contact of small groups at the head of main columns. I believe observed artillery targets should be informed by motorcycle messengers appropriately marked, sent out from the battery or battalion firing to the umpire with the target organization.

"The greatest difficulty is to make all concerned at the point of contact realize the fire effect of supporting weapons which cannot be seen locally.

"Without a rolling reserve of gasoline, this brigade could not have been supplied in its tactical operations by either the IV or IX Corps. This reserve was attained by using a fleet of hired gas tank trucks which operated under the brigade control between the gas railhead or bulk supply points and the unit gas section. Such a fleet must be contained in the trains of any Army or independent Corps operating a mobile mechanized force. Its tactical control and movement must be in hands of the commander of the force.

"A mobile mechanized brigade or division must be provided with containers to make it more independent of its kitchens. It must expect on many days to contact its kitchen but once.

"The General organization of the present brigade and its equipment proved satisfactory except that it is far too small and light in hitting power.

"These maneuvers have convinced me that the recommendations which I have previously made to the War Department as to organization of an 'armored' 'panzer' or 'mechanized Cavalry' division are basically sound. They provide an expansion of Tank or combat car elements, reconnaissance elements and machine gun elements of about one-third, together with a specially organized and equipped combat team as the supporting echelon.

"These are about to be accomplished. Recent events abroad seem to indicate the necessity for the inclusion of a proportion of medium tanks and the inclusion of the present experimental self-propelled 75-mm. howitzer in the cavalry combat car or tank elements of the armored brigade of the armored division.

"The engineer and medical services essential to the armored elements have recently been provided and were invaluable.

"Military Police (motorcycled) must be provided since the present force has no means to guard or transport prisoners without rendering its armament ineffective. A fact not often appreciated in our army is that in a mechanized or armored command each man has his "Battle Station" just as in the navy. The absence of two men is as effective as the loss of a combat car.

"The 6th Infantry, in Class X, 1½-ton trucks, was attached to the Brigade to make the first experiment in the use of the necessary supporting echelon of rifle and infantry weapon power as it is incorporated in the German armored or Panzer divisions.

"Despite the inaptitude of the regiment, through its too brief period of preliminary organization and training for this purpose, and despite the wrong character and poor condition of the motor equipment which was available to mount it, the experiment was of inestimable value. The regiment performed at one time or another all possible combat missions in support of the armored elements: Reinforcing reconnaissance, giving a pivot for advance guards, use as a flank guard, rear guard and outpost, holding a center position to enable mobile wings to counterattack and use as a reserve for the mechanized Elements.

"Such an element must enter into our armored divisions. It should be of the full strength of a line of infantry regiment, organized to provide its motorcyclists, mainte-

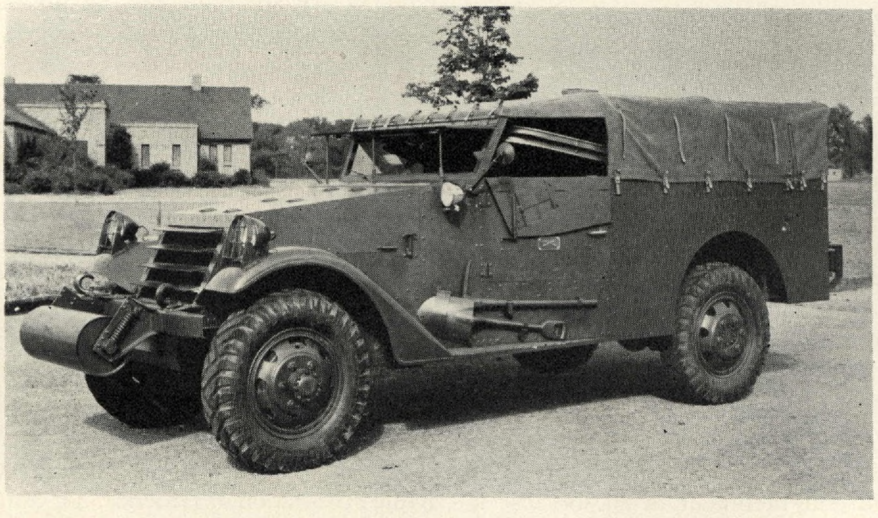
---

[*] Excerpts from a report by Brigadier General Adna R. Chaffee, Commanding the 7th Cavalry Brigade (Mechanized) in the Louisiana maneuvers.

Mechanized Cavalry on the march, Louisiana Maneuvers

nance elements and a strong antitank element. It should be carried, not in trucks, but in armored half track carriers of the types proposed and about to be tested by the 7th Cavalry Brigade (Mecz.). There must be no thought of providing comfortable riding space for a squad of men. The object is to transport as many men and infantry weapons to battle as can be crowded above the axles and thus save road space and maintenance. For route marches the overcrowding can be reduced by using artillery vehicles and trains. The 6th Infantry had far too many trucks even after I directed that thirty-two be left in Monroe, La., before the maneuver.

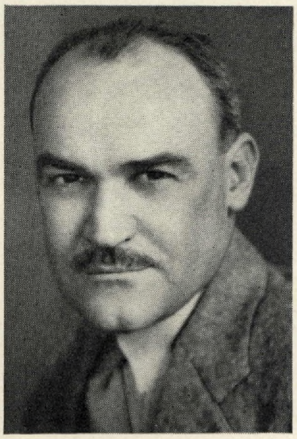
"The present artillery component is sufficient only for the support of the armored-mechanized cavalry-elements. The infantry supporting elements should have a battalion of 105-mm. howitzers in direct support as has any other combat team."



Newest type Cavalry Scout Car. (Note roller in front)

Editorial Comment

In receiving the editorial pencil from Lieutenant Colonel Charles S. Kilburn, there is satisfaction in that the first use to be made of this figurative pencil is the writing of a commendation of the splendid results achieved by Colonel Kilburn during the past three years of his editorship of our Cavalry Journal. That Colonel Kilburn has been transferred to duty as chief of the Operation Section in the Office of the Chief of Cavalry is manifestly indicative of our Chief's confidence in his ability to *get the job done.* During this trying time of army expansion and transition we need staff officers in key positions with background and vision; officers who can think in terms of modern development in its broadest sense, rather than in "shoestring" equipment and tactics of ordinary peacetime routine. Our best cavalry salute to you, Colonel Kilburn!



Colonel Kilburn

Policy

As to editorial policy, The Journal will continue along the lines as indicated by Colonel Kilburn; that is: The Cavalry Journal is our trade journal, as it were. It is a medium which, in a sense, is a decorous open forum where cavalrymen, *without the reflection of official indorsement,* can exchange ideas to promote professional improvement and *esprit de corps;* to preserve and foster the traditions of the cavalry of the Army of the United States; where we can be informed of new developments, not only in our branch but in those supporting branches which go to make up our cavalry combat team; and not forgetting the human side of our service—our sense of humor. In this latter respect, two new departments will be available:

(1) "Spark Plugs," where one can get those irritating matters "off his chest"—"let off sparks"—those superradical, colossal ideas which at the moment seem all important, often are, but occasionally they are not so important. At least, let's make it constructive. If your article is timely, has merit, and is decorous, it will be published. Sign or not; it's yours for the choosing and no questions asked. Spark up!

(2) "Horse Feathers." In this section the playroom, dayroom, picket line, garage or what-have-you, jokes, puns, poems, jingles, songs, etc., can burst forth into print for the enjoyment and enlightenment of all, because it serves two good purposes. Primarily, it helps to smooth over the rough spots; secondly, in a lighter vein it often brings to the attention of higher authority something which otherwise might not be approached with propriety.

In addition, there will be a section showing the War Department changes in cavalry personnel.

If you have any further desires of a constructive nature, write to your editor. It is *your* Journal, keep it alive. Write in anyhow.

Horses in the German Army Today

Reliable sources report that the following number of horses are used in the German army today:

In the German cavalry divisions there are 6,000 horses.

In Corps cavalry regiments, 14 regiments identified (probably additional units of this type exist), there are about 950 horses per regiment; total, 13,300 horses.

In the 200 German infantry divisions, mounted platoons in infantry regiments (30 in 600 regiments); total, 18,000 horses.

In the 200 German infantry divisions, horse-drawn artillery has 406,000 horses.

Three thousand eight hundred fifty-nine horses per division times 200 gives a total in divisions, including artillery, of 771,800 horses.

Horse-Drawn Supply Units: The number of horse supply columns in the German army is unknown. Horse supply columns are attached to German infantry divisions only in special situations.

The grand total (not including supply columns) in the German army is approximately 791,100 horses.

* * *

The United States cavalry today has approximately 9,000 horses, and more are urgently needed to bring units to our authorized full peace strength. In this regard we might compare our present cavalry horse strength with that of the *German cavalry strength, which is approximately 18,300 horses—more than twice our cavalry horse strength.*

Announcement

The Horse and Mule Association of America will give $500.00 in cash prizes for the most interesting and informative news stories published in newspapers in the United States between June 1 and November 1, 1940, on *facilities for riding* in the areas served by the newspaper in which the article appears.

For further information, write direct to The Horse and Mule Association of America, 407 South Dearborn Street, Chicago, Illinois.

Modern Cavalry

The forward-looking and logical step taken by the War Department in directing the creation of an Armored Field Force must not be taken as lessening the necessity for filling out our horse cavalry and putting it on as effective a basis as possible. Suffering many losses under the successive reductions in the Army since the World War, but sharing in virtually none of the recent increases, the horse cavalry has gone forward doggedly with a training and development program which has kept abreast of the times and yet preserved its traditionally American rôle of rapid mobility over all types of terrain, high fire power, shock and surprise. When the task of developing mechanization was turned over to it, the cavalry went forward with zest. The original mechanized regiment was developed into a brigade and then expanded to a point where small increases would have made it a division. *The Chief of Cavalry last fall urged that two mechanized divisions be organized at once and two more if an emergency should arise.* But in recognizing the importance of mechanization there must be no deëmphasis of horse cavalry. The United States, nor the Western hemisphere which we are now committed to defend, is not all flat country like Poland and northern France. There is much mountainous terrain, sandy and swampy country, where horse cavalry could operate with great advantage and where motorized elements would be at a corresponding disadvantage. Moreover the United States possesses great animal resources, some 11,000,000 horses. The failure to be prepared to exploit this superiority would be shamefully uneconomical. Unfortunately there is too restricted an understanding of the capabilities of modern cavalry and too much disposition to think of it in terms of outmoded charges with drawn sabres. There should be more widespread recognition of the fact that the American Cavalryman today fights dismounted with varied automatic weapons of high fire power, but that the horse enables him to get into position (often in places otherwise inaccessible) more rapidly than the enemy anticipates, or when the occasion requires to disperse rapidly for protection. Portée Cavalry, made possible by the use of regular commercial stake trucks, possesses the same strategic mobility as motorized infantry and yet retains the tactical mobility afforded by the horse in the theatre of operations. With the promised expansion of the First Cavalry Division, the next step should be the completion of the Second Cavalry Division and organization of units necessary to build a Cavalry Corps. This should be done promptly.
—Editorial from *Army & Navy Journal,* July 6, 1940.

* * *

Endurance Ride

The Green Mountain Horse Association will hold its Fifth Annual 100-Mile Trail Ride, August 29, 30, and 31, 1940, from Woodstock, Vermont.

For further information, write to the Green Mountain Horse Association, Service Building, Rutland, Vermont.

Major General Egleston

Brigadier General Nathaniel Hillyer Egleston, commander of the 51st Cavalry Brigade, New York National Guard, was sworn in July 5th as commander of the new 21st Cavalry Division embracing National Guard units from four states, and was promoted to the rank of Major General.

The new cavalry division has been in organization for several months as a part of the War Department's plans for streamlining the National Guard. It will consist of the following units:

The 51st Cavalry Brigade, New York; the 59th Cavalry Brigade, New Jersey and Pennsylvania; the 112th Field Artillery Regiment, New Jersey; the 21st Quartermaster Squadron, Massachusetts; the 121st Armored Car Squadron, Massachusetts; the 21st Reconnaissance Squadron, New Jersey, and the 21st Signal Troop and Headquarters Troops, Staten Island.

Major General Egleston, whose appointment was recommended by Governor Herbert H. Lehman and passed by a board of National Guard officers, is the second man in the history of the National Guard to rise from the rank of private to that of major general. The only other officer to achieve such distinction was Major General John F. O'Ryan, who commanded the New York National Guard in the 27th Division during the World War. He is now on his way to Japan on a fact-finding mission under the auspices of the Japan Economic Federation. Other National Guard major generals have been graduates of the United States Military Academy at West Point.

Major General Egleston, who is general solicitor for the New York Telephone Company, has served with the National Guard since 1907, when he enlisted in Squadron A in New York City. He served on the Mexican border as a second lieutenant in March, 1915, and went to France in 1917 as a first lieutenant in the 105th Machine Gun Battalion, 27th Division. Later he was made a major of the 106th Infantry, in charge of the 3d Battalion. He was mustered out of federal service on April 19, 1919, at Camp Upton, Yaphank, Long Island, after receiving the New York State Conspicuous Service Cross and four citations for bravery. He is a member of the Military Order of Purple Heart.

Returning to Squadron A of the National Guard, then known as the 2d Squadron of the 101st Cavalry, he was promoted to lieutenant colonel in 1932 and brigadier general in 1933, when he was placed in charge of the 51st Cavalry Brigade. He was born in Elizabeth, New Jersey, in 1884.

Our congratulations to General Egleston and to the National Guard Cavalry.

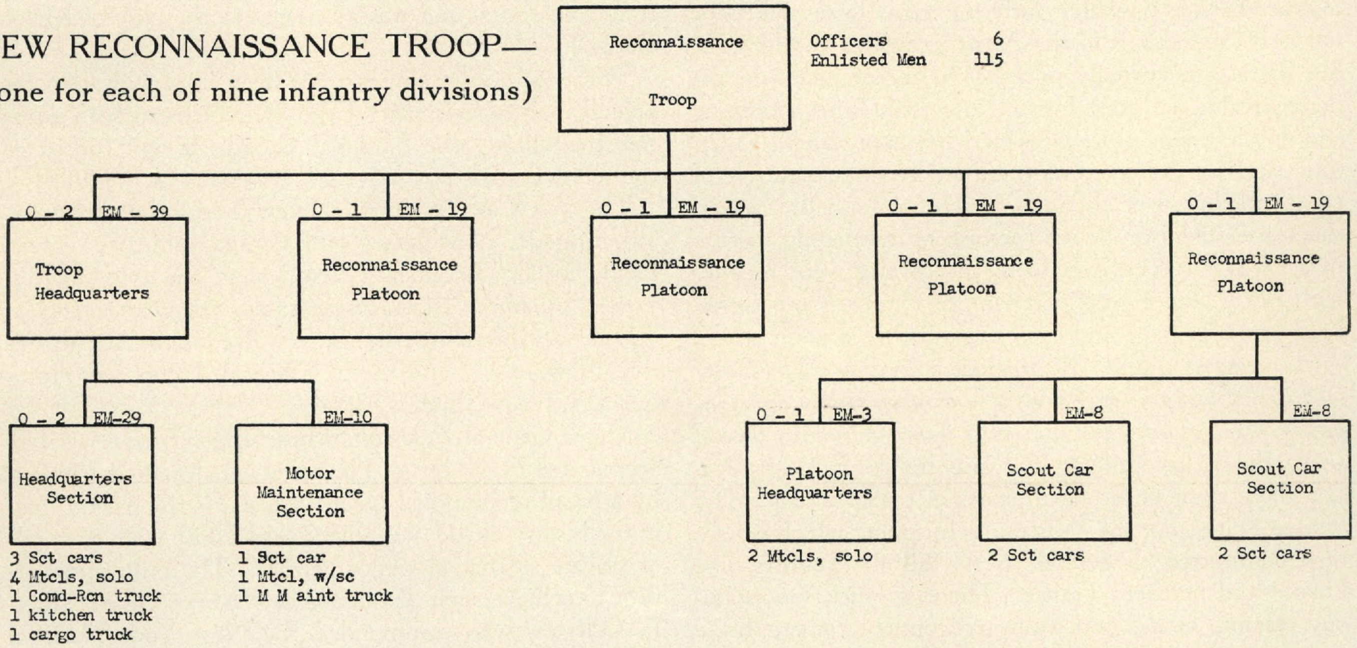
* * *

Rail Transportation

Of the estimated total of 305,000 army troops scheduled to participate in the August maneuvers, approximately one-third will be transported to the maneuver areas in 466 special trains totaling 5,280 railway cars.

Notes From the Chief of Cavalry

NEW RECONNAISSANCE TROOP—
(one for each of nine infantry divisions)


Reconnaissance Troop
Officers 6
Enlisted Men 115
0 - 2 EM - 39
Troop Headquarters
0 - 1 EM - 19
Reconnaissance Platoon
0 - 1 EM - 19
Reconnaissance Platoon
0 - 1 EM - 19
Reconnaissance Platoon
0 - 1 EM - 19
Reconnaissance Platoon
0 - 2 EM-29
Headquarters Section
3 Sct cars
4 Mtcls, solo
1 Comd-Rcn truck
1 kitchen truck
1 cargo truck
EM-10
Motor Maintenance Section
1 Sct car
1 Mtcl, w/sc
1 M M aint truck
0 - 1 EM-3
Platoon Headquarters
2 Mtcls, solo
EM-8
Scout Car Section
2 Sct cars
EM-8
Scout Car Section
2 Sct cars

VEHICLES:

20	Scout cars
12	Motorcycles, solo
2	Motorcycles, with sidecar
1	Truck, ½ ton, 4x4, command reconnaissance
3	Trucks, 2½ ton, 6x6, cargo

WEAPONS:

3	Guns, machine, light Cal..30
40	Guns, machine, heavy Cal..30
20	Guns, machine, (HB) Cal..50
34	Guns, submachine, Cal..45
121	Pistols
10	Rifles

RADIO SETS:

20	Radio sets.

Increase in Regular Army Cavalry

The Cavalry has received a reasonable proportion of the increase authorized for the Regular Army of 375,000 men.

The units of the 1st Cavalry Division are being brought to full peace strength. Each of the four cavalry regiments of the division will consist of nine troops, that is, a headquarters and service troop, a machine gun troop, a special weapons troop and two squadrons of three rifle troops each. This makes a total of about 2,000 cavalry enlisted men added to the division.

The cavalrymen serving at Fort Knox will be utilized in the new armored corps and their number will be increased by about 1,200. There will be initially about 125 cavalry officers serving with this armored corps.

Also authorized is a cavalry reconnaissance troop composed chiefly of scout cars and motorcycles for each of the nine triangular infantry divisions. Each troop will be organized similarly to the reconnaissance troop in the armored divisions and will consist of about 105 enlisted men.

The 9th Cavalry has received a slight increase of 118 men. The 2d Cavalry and the 14th Cavalry, less 1st Squadron, now serving at the Cavalry School at Fort Riley, Kansas, will be able to furnish between them a nine troop demonstration regiment.

In common with other arms and services the Cavalry will receive shortly a considerable increase in grades and ratings for all units, which has been badly needed for sometime.

All told, in the 375,000-man army there will be about 12,000 cavalrymen serving with cavalry units and about 4,000 serving with armored units, a total of 16,000.

PRESENT PROPORTION OF OUR HORSE TO MOTORIZED AND MECHANIZED CAVALRY PERSONNEL (ESTIMATE) IN 375,000 ARMY

Unit	*Horse*	*Mech. & Mot.*
Hq. Spec. Trs. & Hq. 1st Cav. Div.	10	113
Tr. A, 1st Reconnaissance Squadron	0	98
Hq. Tr. 1st Cav. Brig.	42	25
Hq. Tr. 2nd Cav. Brig.	42	25
Hq. & Hq. Co. 1st Armored Div.	0	165
Reconn. Bns. Armored Div.	0	1,078
Ten Reconnaissance Troops	0	1,127
1st Armored Regiment	0	1,363
2nd Cav.	688	100
3rd Cav.	589	70
4th Cav.	205	454
5th Cav.	1,052	100
6th Cav.	381	707
7th Cav.	1,052	100
8th Cav.	1,024	100

Unit	*Horse*	*Mech. & Mot.*
9th Cav.	466	80
10th Cav.	590	70
11th Cav.	589	70
12th Cav.	1,024	100
13th Armored Regiment	0	1,335
14th Cav.	589	70
Totals	8,343	7,350
Percentage	53%	47%
Without 9th and 10th Cavalry		
Total	7,287	7,200
Percentage	50%	50%

Editor's Note: It is noted that approximately 50% of our present available enlisted cavalry personnel are serving with *cavalry motor elements*. This obviously indicates that American cavalry today is organized and trained along lines entirely different from that of so-called European horse cavalry. Our hard-hitting cavalry utilizing both horse and motor has developed a modern technique employing extreme battlefield mobility and intensive fire power in the execution of cavalry missions; best suited to conditions in the Western Hemisphere.

* * *

Army Maneuvers, 1940

Regular Army Cavalry units will participate in each of the four (4) Army maneuvers being held during August, 1940. Tentative schedule and Regular Cavalry units participating:

First Army—Plattsburg, Watertown, New York Area, August 5-25—3d Cavalry.

Second Army—Camp McCoy-Camp Williams, Wisconsin Area, August 11-31—1st Squadron, 14th Cavalry.

Third Army—Sabine Area near Alexandria, Louisiana, August 4-24—1st Cavalry Division and 6th Cavalry.

Fourth Army—Camp Ripley, Minnesota, August 4-24—2d Cavalry, 4th Cavalry, and 14th Cavalry (less 1st Squadron). At Fort Lewis, Wash., August 4-24—11th Cavalry.

* * *

Equipment

The Chief of Cavalry is pushing a project to make the 37-mm. AT guns self-propelled; that is, to permanently install the 37-mm. gun in a scout car and fire it from the scout car.

The Chief of Cavalry realizes that all arms are far behind on train defense, both antitank train defense and antiaircraft train defense. A new project to install Tourelle mounts in the top of cabs on trucks has been initiated.

There are being shipped to the 4th and 6th Cavalry regiments new truck-tractors with semi-trailers. The truck-tractors are 2½-ton, 4 x 4, vehicles. The semi-trailer is sufficiently large to transport 8 animals, 8 men, and their equipment.

The Chief of Cavalry has recommended equipping the Quartermaster Squadron of the 1st Cavalry Division with stake-portée cargo trucks, each truck capable in a special situation of transporting six horses, men and equipment. He has also recommended that the cargo trucks of cavalry regiments (except kitchen and maintenance trucks) be of the stake-body type.

In addition, recommendation has been made to include as an organic part of the cavalry regiment two truck tractors (2½-ton, 4 x 4) with semi-trailer, each capable of hauling eight horses, eight men and their equipment. This would result in the following facilities in the 1st Cavalry Division: QM Squadron; part of cargo trucks in each regiment; 2 truck tractors with semi-trailers in each regiment. The details of this plan, however, have not yet been worked out, awaiting action on recommendation for equipment.

Priority for the distribution of critical items of equipment has been given to the 1st Cavalry Division.

As a result of recommendations from the field, there has recently been approved as standard a new type of boot for the cavalry soldier. The new boot has a more durable shoe part. The leg part is closed by three straps and buckles which does away with the lacing of eyelets and hooks, thereby facilitating the putting on and taking off of the boot. This boot will be issued to the mounted service when the present supply of boots is exhausted. The Chief of Cavalry also has under study for garrison use the issue of a low-quarter shoe.

Lieutenant Colonel Willard S. Waddleton, liaison officer at the Chemical Warfare School, in collaboration with chemical engineers, has developed a cannister type horse gas mask. This mask has been tested at Fort Riley and has been the subject of favorable reports. However, there are still some "bugs" in it and work on it will continue.

A radio survey has been made for the frequencies required by cavalry units. This was found to be necessary due to the increase in the number of radio sets in cavalry units. Nothing definite has come out of the "mill" on this study but it is hoped that sufficient frequencies can be obtained for the cavalry to insure satisfactory communication.

* * * *

Training Memoranda to His Regiment

By COLONEL GEORGE S. PATTON, JR., 3d Cavalry

My observations at the maneuvers in Georgia and Louisiana induce me to re-stress the following points which are so obvious they are never remembered.

Cavalry Scout Cars

Scout Cars are not Combat Cars. Their mission is to find out and report—not to fight except when it cannot be avoided.

It is not necessary to push your nose against the glass to see through a window. Observation from a distance is just as efficient and much safer. Also, you may not be observed. USE FIELD GLASSES.

On approaching a curve or ridge under conditions where an enemy is apt to be encountered, stop as far from the critical point as circumstances permit (not over 400 yards), and send up a dismounted man to observe. If he is fired upon cover him with your guns.

Stop on our side of cross roads so that the enemy cannot use them to cut you off.

ALWAYS put out flankers when you halt.

If attacked by enemy planes fire at them with everything you have. If you are under cover keep quiet.

In delaying actions fire from your ground mounts, and get the car under ground defilade. This action will deceive the enemy as to what is against him, and it will protect your car; a good enemy will have cannon or 37-mm. guns well up. Bushes do not stop shell. Open fire at long range. Your job is to delay, not to kill.

Your armor will not permit you to assault, but your road mobility will enable you to go around. Do so. Or, you can hide off the road, and let the enemy pass, and then go on.

Enemy planes seek objectives near roads, so when you hide get well off the road. Take out your windshields and cover your cars with fresh local brush. Withered brush is a dead giveaway. And again *cover your flanks.*

When you discover anything REPORT IT PROMPTLY AND CLEARLY, using regimental code. Keep sending until you get an acknowledgment.

Fill your tanks at every opportunity. In withdrawals destroy all gasoline you cannot use.

Horse Cavalry

The secret of success in mounted operations is to GRAB THE ENEMY BY THE NOSE AND KICK HIM IN THE PANTS.

As soon as horse cavalry hits opposition contain it in front with a minimum of force, and get around its flanks. THIS OPERATION MUST BE AUTOMATIC FOR ALL UNITS FROM THE PLATOON UP.

Against motorized columns the objective is the trucks. At maneuvers these trucks will be just around the first bend or back of the first hill. In war they will be at the limit of our light guns. Attack the trucks by fire; close contact is not necessary. Tracer bullets will be very useful. If the wind is favorable, set fire to anything that will burn and reach them.

In delay by successive positions along an axis use guns and automatic weapons on the head of the column, and keep picking on the flanks. It is less costly and much more effective.

In leaving a position, move straight to the rear by squad. Avoid the roads as they will be shelled and bombed. Pull out in such time that the leading elements of the enemy cannot get to the position you have left until you are covered by the next. Leave a few light guns in an intermediate position to fire on the enemy when he first arrives in the abandoned position. This will cool his ardor. As soon as you occupy a position reconnoiter cross country routes to the next position, cut the fences and prepare and mark the stream crossings. When you fall back, move out rapidly but not hurriedly. THINK AHEAD.

Always cover your flanks. If the enemy advance seems unduly slow, watch out—he is making a turning move.

In attack, push into close range by the use of machine guns and artillery. Use your rifles for the assault. ALWAYS HAVE SOME MEN ATTACKING HIS REAR.

In defense use machine guns and cannon only. Counter attack from the rear with your rifle troops.

Anti-tank guns must have their flanks protected by riflemen, or they will be taken by envelopment of dismounted men.

Always fell trees and burn bridges on roads leading to your position of bivouac. Slashings to be effective must be in cuts, dense woods or causeways.

Anti-tank guns are deadly at 1,000 yards. The guns in tanks are not. Select long fields of fire for your AT guns. Reverse slope positions for AT guns are only useful if they can fire at right angles to the line of advance of the tanks.

Never bivouac near a road. Only march on them, if you must. In strange country, airplanes follow roads and see things on or near them.

If you think you have been seen going into camp, move as soon as it is dark. Outpost all roads WELL OUT and at obstacles if possible.

On the march carry saddlebags and cantle rolls in the trucks as long as you have any. On administrative marches, carry the automatic weapons, 37-mm. guns and ammunition for same in trucks. Only have the pack saddles on the horses.

When going to war or maneuvers leave the curb bits home.

Keep your trucks away from your horses.

Next to a windshield a khaki tent is the most visible object from the air.

Prevent the indiscriminate running about of trucks, command cars, motorcycles, etc. The more we have the more we use. It is not soldierly to send a two-ton truck for a can of beer, but it is done all the time. This must stop.

The above principles will be followed by all units of this regiment in instruction, in maneuvers and in war.

The troops of this command, not engaged in the conduct of the Cavalry Concurrent Camp, will conduct tactical training concurrently with other training, and will include rifle platoon problems involving the use of attached light machine guns in attack and defense.

In general, the following procedure will be adhered to by the platoon:

In the Attack

The platoon with its light machine gun squad, will advance in the following order:

Two of the platoon scouts will precede the main body by such distance as will protect it from surprise enemy fire. The other scout will remain with the platoon leader, for such duties as may be required.

The light machine guns will follow the scouts as closely as the situation and terrain permit, with interval of from 35 to 50 yards.

The Platoon Leader will follow in a position from which he can control the movements of the light machine guns.

The rifle squads will follow the light machine guns with such formation and intervals as are necessary for protection, but such that will insure control.

The scouts will advance as long as they are under cover. When exposure is imminent, each will select a position for a light machine gun and signal it forward. Each gun will occupy its selected position and open fire, covering half of the target. The scouts will then advance and select alternate forward positions.

The light machine guns will move forward, alternately, on the platoon leader's command, with each gun engaging the entire target to cover the advance of the other. IT MUST BE REMEMBERED THAT THE ADVANCE OF THE LIGHT MACHINE GUNS IS IMPERATIVE.

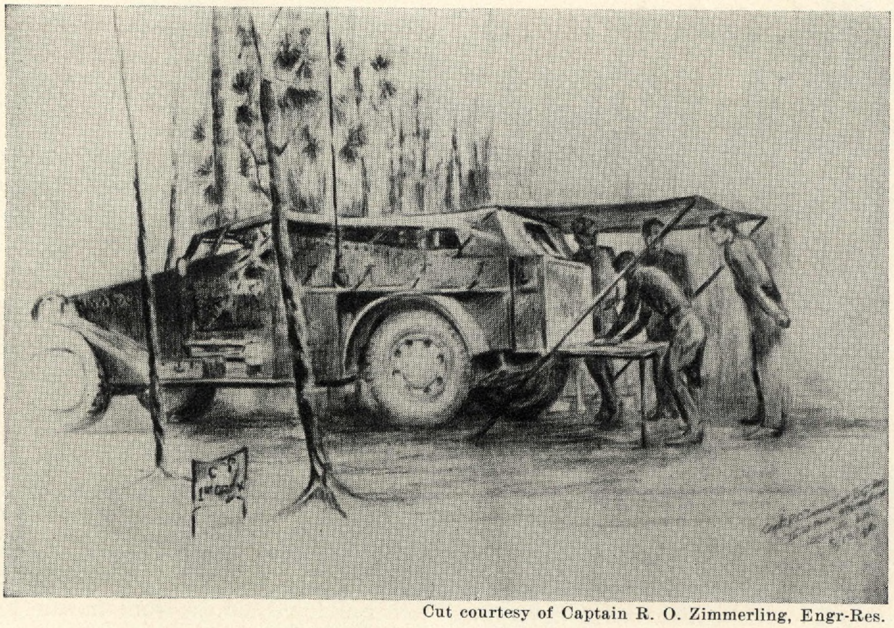
While the machine guns are thus engaged, the riflemen of the platoon may be employed in attack on either or both flanks or in counterattack, or may be held in mobile reserve. If flanking movement is elected, the attack should be made at an angle of not les than 90 degrees to the line of fire of the light machine guns. It must be remembered, however, that a sufficient reserve should be maintained at all times to protect the flanks of the light machine guns.

It must be borne in mind that the surest way to avoid losses is to inflict losses on the enemy by your own fire.

In Defense

The machine guns and light machine guns are separated by much larger intervals.

Riflemen are used for counterattack on the enemy flank and rear. A sufficient number of riflemen must be used for close in protection of the automatic weapons.



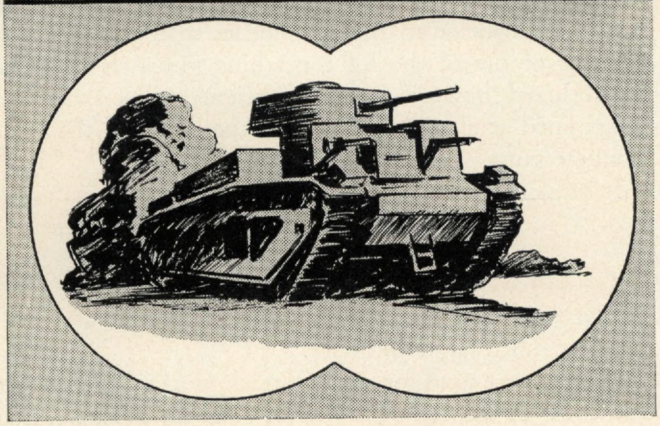
Cut courtesy of Captain R. O. Zimmerling, Engr-Res.

A Cavalry Command Post.

CARDED

Who's Who?

How will we recognize distant tanks and combat cars as friendly or hostile?



By Major Wendell G. Johnson Infantry

No mere map-problem phrase is "the fog of war" when in real battles men have to stop, look, and even listen to determine who's who. Afoot or mounted, entrucked, entanked, or emplaned, in the smoky distance friends look much the same as enemies. The greater the distance and the thicker the murk, the more difficult they are to recognize or identify.

Mistaken identity can bring about disaster when shooting irons are toted. It has caused men to be potted, truck trains and guns to be strafed, planes to be winged, attacking troops to be fired on, and tanks rallying rearward to be peppered—all by comrades in arms.

Shooting friends in the belief that they are enemies is tragic. But withholding fire on enemies for fear they may be friends has also brought tragedy. Either kind of mistake seldom goes uncensored or uncut into the pages of military history. Yet in war memoirs and battle records many examples can be found. The World War and the Spanish civil war are full of them.

What intensifies the difficulty of recognition and identification is the ever-increasing use of cover, concealment, camouflage, color blending, elimination of distinctive markings, use of neutral colors. These facilitate movement on the battlefield, gain surprise, deceive the enemy. But what deceives the enemy all too often deceives the friend as well. On modern battlefields nobody can believe his eyes.

A common question during last summer's Plattsburg maneuvers was: "How can we tell enemy tanks from our own?" The answer was easy when infantry tanks were on our side and cavalry combat cars on the other: "Theirs have double turrets."

But even this marked difference in type was not generally known until it was disseminated, for the simple reason that our army is woefully ignorant about its own mechanized vehicles. Why? Because tanks have not been seen, before the maneuvers of the past twelve months, by more than a small fraction of the Army. Of foreign types we know practically nothing. What chance have we had to know them?

Unfortunately, recognition of tanks in general is nowhere near as simple as it was in our peacetime maneuvers at Plattsburg. Armored track-laying combat vehicles in all armies have gradually become more and more alike. Distinguishing differences at a distance are minute or disappear entirely. The same may be said of other motor vehicles, of planes, guns, and military attire. Consequently, the questions "who's who," and "shall we shoot or not," are far more difficult to answer in modern warfare than when red coats meant Britishers and blue pants Frenchmen.

But an answer must be found. Means of recognition and identification must be devised. As a one-time tanker and now an antitanker, I am concerned primarily with recognizing friendly from hostile tanks and identifying both as to type and characteristics. What can be done to help antitank gunners, tank crews, and airplane bombers in this matter?

In the British, German, and Russian armies these troops carefully study their own and all foreign types of armored fighting vehicles. They learn every visible, distinguishing detail. We should do the same thing.

Recognition training should be a part of all troop instruction, especially for scouts, ground observers including antiaircraft guards and antitank guards, personnel of combat and observation aviation, tank crews, and antitank-gun squads. Instruction should begin with a study of our own machines at close hand, then at a distance and in movement on typical combat terrain. Items like track arrangement, size and number of bogie wheels, general contour, and location, number, and appearance of turrets and other projections should be pointed out, studied and memorized. Silhouette charts and photographs of the different types of tanks should be hung up in barracks where men can examine them at odd times. Even latrines might not be a bad place for contemplating of tank photos. Training films of the tanks on various kinds of terrain and series of still slides would be excellent to show what our tanks look like from different angles and at varying distances.

Rotating tables can be rigged up, and scale models made, so that one after another, the different tank types could be examined from various angles and at increasing distances. This would be a good way of testing training progress, and good also for indoor work—especially on indoor subcaliber antitank ranges. Perhaps animated films could be made from these scale models.

Some foreign armies have distributed so-called silhouette charts showing profiles and miniature photos of various tanks. These can be carried in the pocket for ready reference. They are good for occasional study, but a soldier can't waste time referring to such a gadget when half a dozen tanks are bearing down on him.

Once a group of men becomes thoroughly acquainted with our own machines, the same general procedure must follow with foreign tanks. Naturally, nobody is going to lend us foreign tanks to examine at close hand, but undoubtedly there are plenty of pictures in G-2 files that could be used. The study of foreign tanks should include armor thickness, armament, and speeds for each model.

All this training must be supplemented by a scheme of recognition signals or markings that will work regardless of camouflage, atmospheric conditions, distance, or direction of approach. Large, permanent *markings* on tanks would, of course, help enemy and friend alike. Also, mud, fog, smoke, or camouflage might easily obliterate them. Some non-permanent *signal* would be far better; one that could be changed daily or even more often, and used only on call or challenge, or at prescribed times. Such a signal shown or flashed by a tank upon demand from an antitank-gun squad would serve the same as the answer to a sentry's challenge.

Not only antitank-gun squads, but also tank crews have to determine from afar whether friendly or hostile machines are approaching them. They have even more difficulty telling who's who. They lose direction, can't

Tanks are not ordinarily used at night, but they do move into attack positions during darkness. Hence they should use signals visible at night.

see much, and in dust, smoke, or fog are really blind. So besides being trained to recognize their own and enemy machines, they need some way to challenge tanks they encounter but are unable to recognize because of distance or atmospheric conditions. Here also, of course, the means for replying are required on friendly tanks.

No doubt there likewise ought to be markings or signals that identify vehicles as to unit so that tanks of one platoon or company can keep together in the dispersion, confusion, dust, and smoke accompanying a tank action.

Air observers must also be considered. Observation aviation has to be able to differentiate between friendly and hostile tanks and besides, must if possible, be able to identify particular units of friendly tanks. Combat aviation also is interested in this matter. Therefore, in addition to other training in recognition, aviators will also need top-view charts and markings or signals on the tanks. Visual demand-and-response signals aren't so practicable because cooped-up tank crews might not see the call signal from a plane. However, a solution may be found. Radio would be fine, but it also involves difficulties.

Navies seem to have the recognition problem pretty well worked out. Ships carry markings showing nationality and squadron and even have markings topside for the benefit of airplanes. They use silhouette charts and instruct commissioned and noncommissioned personnel in the appearance of their own and enemy ships. Equipped with his chart and binoculars, a mariner can usually recognize a ship up to ten miles away as friend or foe. At night luminous colors can be hoisted. Ships also carry projectors for challenging and replying in Morse code. Luminous signals were used by both the Allies and the Central Powers from 1914 to 1918.

Of course this challenge procedure has some bugs in it. It isn't wise to indulge in promiscuous flashing of the password, especially at night when any ship within sight—friend or enemy—can see it. In December, 1914, during the Scarborough raid, a German ship queried "Who's there?" upon sighting a ship some three miles away. Though the challenge was in the German code, the British ship replied with "KF" repeated three times. The Germans then opened fire. Later on, the same German ship got cornered and flashed KF three times and thereby was permitted to escape, along with a couple of other German boats. In the battle of Jutland, the Germans saw one British ship ask another for the prescribed recognition-and-reply signal and soon the whole German fleet was informed. Later when the *Elbing* and *Hamburg* flashed "UA" to the British 11th Torpedoboat Flotilla, and at the same time opened fire on its craft, many torpedoboats held their fire, figuring friendly cruisers were shelling them.

Naturally, the methods used by ironclads afloat won't work any too well for those on land. Battleships move in two dimensions; tanks in three. That is, tanks also go up and down hill, behind slopes and woods, show their bellies, then their tops. Ships can be seen afar off, tanks only a few hundred yards away. Seconds count on land. Signals must be faster.

A mariner knows just where he is. Tankers often lose their bearings and don't know whether the tanks that come in view are moving from the direction of friendly or hostile lines.

Also, with only three or four men in a tank you can't expect to detail one man as a recognition-and-identification expert which they do on a ship. Neither will a tanker have time to compare a tank he sees with those on his chart of tank silhouettes.

We do have electrical installations on tanks that can be used to provide juice for luminous signals, but the signals must be much simpler than those used by ships. It isn't necessary to change signals very often on land cruisers because if one hostile tank crew does learn the code it can't pass it on to other tank crews in time to be of use. One set of signals for each phase of an operation, or perhaps for each objective, would be enough.

Tanks are not ordinarily used at night, but they do move into attack positions during darkness. Hence they should use signals visible at night.

Considering all factors together, these appear to be the characteristics needed in *recognition signals* for use by tanks:

(1) They should not be permanent.
(2) They should be designed both to challenge and to reply to challenges.
(3) They should be easy to operate from within the tank.
(4) They should be projected by a small apparatus.
(5) They should be visible either by day or night, and at a distance of, say 1,000 to 1,500 yards, and visible to the flanks as well as to the front.
(6) The projection apparatus should be sturdy and protected from fire.
(7) It should be possible to change signals immediately upon order.

For recognition by friendly aviation, signals should be visible from the sky. And they should be designed so that they can be concealed or extinguished when not required, in order to escape hostile air observation or photography. They should not be visible from planes above a given altitude or to hostile OP's.

There are a number of possible ways of handling the recognition problem.

First, we have distinctive, permanent markings. These are suitable for identification of units by friendly tanks, but do not meet the characteristics needed for distant recognition as to nationality.

Then, there are metallic flags or semaphores. These can't be protected; they can't be seen at a distance or at night; and they require a complicated apparatus liable to break down in combat.

Cloth flags operated by the tank commander won't work at night and are hard to see at a distance. Disappearing disks and the like have the same disadvantages.

Shortwave radio? There is already too much radio. It is costly, and a set would be needed for each tank and each antitank gun. It is, of course, a solution in fog and smoke.

Smoke and smoke shells are uncertain, and liable to be misunderstood. Rockets, Very pistols, and similar devices reveal too much to the enemy and may not be seen in daytime. They are also hard to project from inside a tank. However, they would be suitable for emergency use, especially for signalling to friendly aviation hounding a tank unit by mistake.

Special movements or maneuvers of the tank turret or the tank itself have been suggested for signalling, just as airplanes dip or wiggle their wings, but they are liable to be misunderstood or go unnoticed in combat. Moreover, little variety is obtainable and signalling movements might be confused with actual combat movements.

Sound signals by sirens, possibly with variations in tone, and using the Morse code, have certain advantages. But in all the noises of a battlefield they might not work at a distance. Close-in and during fog, they would be all right.

What should work most satisfactorily are luminous electric signals; that is, colored lamps or lights. These answer practically all requirements: day and night use, nonpermanency, variability, ease of operation from inside the tank. And lamps can be protected too. Moreover, each *antitank-gun* section could readily be provided with signal lamps to be set up a hundred yards or so from the guns in order to challenge oncoming tanks.

It might be possible to use the headlights now found on most tanks, but these would have to be protected from fire, say by pulling them inside the tank or having pivoting armorplates to screen them from fire when they were not in use for signalling.

Practically all-around visibility could be obtained by using antisolar protective steel guard hoods on the lamps, something like the ones used on traffic lights and railway signals. Or several colored lights could be put behind slits in the armor, and pivoting plates used to cover the slits when signals weren't being flashed.

On tanks with rotating turrets it might be possible to mount lights inside near the base of the turret so they would shine through apertures while the turret was rotated in a desired direction.

Whatever the arrangement of the lamps, there should be a hookup to operate them with a key or button so code signals could be sent. Colored lenses would permit greater variety and more code combinations. Colored flashes would be more noticeable in daytime. Tanks might flash, say twice red followed by twice green; or dot-dash-red, then dash-dot-green.

Lamps possess the additional advantage of affording a means of communication within a unit when radio fails. A simple code covering regularly used orders ought to be routine for use either by radio (CW), lamps, or siren.

It is true that electrical systems are liable to short circuits, broken bulbs and lenses, and other failures—especially

Note how combat cars blend into the scenery and how difficult they are to recognize or identify. Means of identification and recognition must be devised. Moreover, signals should be visible from the sky to insure recognition by friendly aviation.

when subjected to the severe conditions of battle. Mere protection of each lamp behind narrow slits or small holes in the armor won't insure them against electrical faults. It would be desirable, therefore, to have other devices to fall back on. The siren is one. Another, usable at night, is phosphorus. It could readily be used to form glowing "buttons" of luminosity attached to plates that would be fitted into slides on the top, sides, front, and rear of a tank. Signals could be sent by moving such a plate in and out from behind a shield. If one of these plates were struck by a bullet or shell fragment it is unlikely that the phosphorus "buttons" would be entirely destroyed.

Besides some sort of luminous recognition signals, tanks should carry *permanent identification markings* for the information of friendly tanks. The best place for these would be on the rear end. (Phosphorescent buttons would be ideal during night moves to forward positions.) Markings should not be so large or prominent that enemy fire would be attracted. They should indicate battalion, company, platoon, and platoon command tanks. This would simplify keeping a unit together.

Geometric figures, such as squares, rectangles, triangles, diamonds, circles, checkerboard, alternate stripes of contrasting colors and combinations of these with letters or numbers, give a degree of secrecy and also of distinction not provided by numerical or lettered markings alone. Colors other than white are preferable. White makes an excellent target against a dark background. For identification markings all that is needed is a color sufficiently contrasting against a background color for it to be seen by friendly tank personnel, say two or three hundred yards away.

This same sort of identification marking is needed on trucks, reconnaissance cars, and command cars. But there more prominent than on tanks. The color of the arm as background facilitates identification. The rear end of vehicles or the big bumpers on trucks is a good place for unit markings; also the front bumper or fenders. Traffic personnel, guides on routes, liaison officers, convoy commanders, and quartering parties responsible for directing vehicles into bivouacs and assembly areas—they are the ones who are especially interested in unit identifications. The present system of marking is of little help to these people when it comes to spotting units as they approach or pass at twenty-five to forty-five miles an hour.

At the Plattsburg maneuvers in 1939, what first was taken to be enemy detrucking a couple of miles from an OP, turned out to be friendly infantry when the trucks were examined closely through field glasses. The unit was identified by the special large markings on the rear ends of its transport.

Confucius might say there should be a scheme for motors to signal with lights to friendly aircraft—for example, when a night motor move is taking place and is under friendly air surveillance. Flashlights could be used for this. The pilot of a plane might gun his motor or flash lights in Morse code, asking "Who are you?" The column commanders would reply with a flashlight.

One more thought—the use of signals and the orders prescribing them. It should be standing operating procedure for tanks to flash their recognition signal frequently whenever they are moving to the rear. The signal to be used should be changed periodically, instructions appearing in field orders under paragraph 3 *x*. The sub-sub-paragraph might be headed "Recognition signals for friendly tanks."

The challenge and reply should be the same for both tanks and antitanks, so that only one set of signals would be needed during a given period. The order might prescribe International Morse signals, for example:

Period	*Challenge Signal*	*Reply Signal*
1st Phase of attack...	Q (green)	U (red)
2d Phase of attack...	S (green)	AM (red)
3d Phase of attack...	W (red)	AK (green)

The same code letters would remain in force for signals by siren whenever fog or smoke made visual signals impracticable. Friendly tanks moving to the rear should probably announce themselves both by lamp and siren signals.

Secrecy requires that recognition signals be changed frequently. However, identification markings may well remain more or less permanent. Therefore markings on tanks need not and should not appear in orders that might fall into enemy hands. Rather should they be communicated to interested units before combat and be memorized by them. Emergency rocket signals, on the other hand, ought to be changed from time to time and should be prescribed in orders.

Speaking of orders brings up the matter of including information of friendly tank operations and probable enemy mechanized movements in field orders, with numbers, routes, objectives and rallying points divulged in the paragraph covering our own tank action.

These, then, are the preventives offered against bouncing bullets off our own iron buggies: *Training in recognition; use of silhouette and photograph charts; prescribed and periodically changed recognition signals, habitually used whenever tanks move to the rear; semi-permanent identification markings; information in orders about our tank operations and routes.*

Only a general idea of what might be done has been indicated. The details will have to be worked out by tankers, ordnance, and signal people.

Up to now nothing has been done. In the last war, lots of remedies came after it was too late. Let's do something to remedy this matter beforehand. At the present time we are correcting deficiencies in our military armament and organization, and in our operating procedure. The present deficiency in means for recognizing and identifying combat vehicles must also be corrected.

Once we equip combat vehicles with signals for recognition and markings for identification, we shall enable the personnel who are vitally concerned to penetrate some of the fog of war and to determine, before it is too late, *who is who.*

The Cavalry School

During the present expansion, the following courses for officers and enlisted specialists are being conducted at the Cavalry School:

OFFICERS' COURSES

Refresher Course for Reserve Officers. Four separate courses each of one month's duration; first course opened July 10, 1940.

Basic Horse and Mechanized Cavalry Course for newly-commissioned cavalry graduates of the United States Military Academy, Thomason Act officers accepted for Regular Army, and honor graduates of senior R.O.T.C. units.

Refresher Course for Regular officers. Three one-month courses, the first beginning on August 31st, in Advanced Motors and Advanced Communications.

ENLISTED SPECIALISTS' COURSES

Horseshoers' Course, 75 days, beginning July 10, 1940.

Saddlers' Course, 75 days, beginning July 10, 1940.

The first one-month refresher course for Reserve officers opened on July 10th with a class of 42 lieutenants of the Organized Reserve in attendance. These lieutenants for the most part graduated in June of the present year from senior R.O.T.C. units of universities and colleges throughout the United States and have been ordered to active duty with the Army for a period of one year, the first month of which will be spent taking the Refresher Course at the Cavalry School. Upon completion of the course, they will be transferred to cavalry regiments, including the 3d Cavalry at Fort Ethan Allen, Vermont, and Fort Myer, Virginia, the 4th Cavalry at Fort Meade, South Dakota, the 14th Cavalry at Fort Sheridan, Illinois, the 11th Cavalry at the Presidio of Monterey in California, the 6th Cavalry at Fort Oglethorpe, Georgia, the 7th Cavalry Brigade, Mechanized, at Fort Knox, Kentucky, and the 5th, 7th, 8th, and 12th Cavalry Regiments along the Texas-Mexico border.

The Refresher Course will constitute a theoretical and practical foundation in preparation for their duties for the remainder of their year of active duty. In Tactics, time will be devoted to a study of reconnaissance, horse and mechanized, attack and defense, and other special tactical phases of cavalry operations. In Weapons, time will be devoted to a detailed study of the various types of weapons used in the cavalry, including firing of these weapons both on the range and during field firing. Special emphasis will be placed on the M-1 automatic rifle, the caliber .30 and caliber .50 machine guns, the 37-mm. antitank gun, and the 60- and 81-mm. mortars. In General Instruction, time will be devoted to troop administration, including training schedules, operation of troop messes, the handling of organization funds, and a study of the regulations and customs of the Service. In Horsemanship, time will be devoted to the correct military seat and to the correct methods of training officers and enlisted men to ride properly; to the control and proper care of the horse on the march, on roads and across country under all conditions and at all gaits; instruction in close and extended order drill mounted, all to the end that the student may be better prepared to undertake the training of officers and men for mounted duties in combat.

The Basic Horse and Mechanized Cavalry Course for newly-commissioned graduates of the U.S.M.A. who have elected to serve in the cavalry, those cavalry officers commissioned in the Regular Army under the Thomason Act, and honor cavalry graduates of senior R.O.T.C. units, will open on August 7, 1940, for a period of three months. The course for these newly-commissioned lieutenants in the Regular Army will include the subjects enumerated above for the Refresher Course with the scope of the course increased so that students will receive considerable additional theoretical and practical instruction. The object of this course is to qualify these young officers for duty as platoon leaders in regular troops in cavalry regiments, as well as to qualify them to command platoons of mechanized cavalry troops. There will be 39 students in this class.

The first Advanced Courses in Motors and Communications will open on August 31st for one month. These courses will be repeated until all available lieutenants in the cavalry have completed the course. The officers initially ordered to attend the Advanced Motors and Communications Courses are those lieutenants who were originally ordered to attend the Regular Course at the Cavalry School, 1940-41, before it was cancelled. There will be 20 officers in this group. Ten will attend the Motors Class and ten will attend the Communications Class. The purpose of these advanced courses is to provide a selected group of qualified officers to supervise the training of motors and communications personnel and the operation of motors and communications equipment which has been added to the army in the rapid expansion which has taken place within the last few years.

In addition to the courses for officers, a series of courses for enlisted specialists is in session at Fort Riley. Horseshoers' and Saddlers' Courses for a period of 75 days opened on July 10th. The object of these courses is to qualify specially selected men for the important duties of correctly shoeing horses and keeping leather equipment in first-class condition, as well as supervising the instruction of new men in the regiments who are selected for duty as horseshoers or saddlers. The instruction includes the theory of shoeing and the theory of working leather, in addition to much practical work in horseshoeing and repair of leather equipment.

The Invisible Weapon.....

By Captain John V. Grombach, Infantry, NGUS

World War No. 2 and the year 1940 have wrought fundamental and unforeseen changes in warfare. Neutral, non-belligerent, and warring powers have found themselves faced with a hundred new problems—air power, motorized and mechanized units, new tactics, parachutists, and by no means least, the Fifth Column. In all this change, communication remains vital to the participant in war. And propaganda and the protection of military secrets are vital both to participants and to nations near the brink of involvement. Thus a mighty power in the struggle for world dominion by nations, forms of government, and ideals, is radio.

International radio is just now beginning to be evaluated adequately as the powerful though invisible weapon it is. Just as dominance in the air by plane may be the key to victory on land and sea, so the use of the ether waves may be the most potent means for mastery of the minds and hearts of men, without which no nation or ideal can survive.

Let us imagine, if we can, the invisible and increasing world-wide host of lightning messengers impressed on carrier waves. A magic which in effect has banished time and space throughout the entire globe. In a minute fraction of a second a mere whisper is audible from the Antipodes to the Arctic and from Cathay to the Caribbean, to one hundred million radio receivers, each capable of listening in to hundreds of messages. There is one radio receiver for every twenty inhabitants, almost sixty million, in the Western Hemisphere alone. The air around our world seethes with long and short waves radiating to those hundred million receivers from more than fifty thousand transmitters of commercial, government, military and naval stations, and from those of over one hundred thousand efficient and indefatigable amateurs. From any point in the world, hundreds of powerful short-wave transmitters are easily contacted, relaying messages from the most remote points of all continents and from seventy-eight different countries. Such, briefly, is the most potentially powerful agency for many purposes that the world has ever known.

While the present airplane, tank, and automatic weapon have changed conditions of combat, radio broadcasting has completely revolutionized the problems of the intelligence sections of the services. For example, before and during the present war, Englishmen and Frenchmen have cleverly sold, in impeccable English and French, Nazi and Fascist ideals and beliefs over the air. Every day, the strongest effort has been made to discourage the English and French civilian public on war. In France, radio propaganda was used to create suspicion and break down confidence in the English alliance. Moreover, before the war and since, a steady stream of information has been sent secretly, quickly, and effectively by the German espionage system by way of the radio. The perfect coördination of troops with aviation, fifth columnists, and parachutists, particularly in Poland, Norway, and Holland, was accomplished largely through radio broadcasting. Also, the German submarine that threaded its way through the safeguards, mines, patrols, nets, and booms of Scapa Flow on October 14, 1939, and sank the British battleship *Royal Oak,* was undoubtedly guided by some seemingly innocent radio broadcast in England or Holland, perhaps even a band concert or a dramatic presentation.

Just as the ancient counterpart of the tank, the elephant, was employed by the Persians centuries ago, codes and ciphers have been used as long as there has been war. In fact, recorded history tells us that a cryptogram to Lysander of Sparta saved a general, an army, and the empire later to be enlarged by Alexander the Great. At the same time, all authorities from Julius Cæsar, one of the first cryptographers, to the Black Chamber of the last World War, all agree that there is really no secret writing code or cipher created by man that cannot be broken by man. But as Francis Bacon, Lord Verulam, himself one of the world's greatest cryptologists, said in his *Advancement of Learning:* "The only truly secret system of writing conceals the existence of a secret." Little did Bacon know of the day when the secret would be even better concealed by not even being written. Seconds may now send a crucial cryptogram hurtling thousands of miles through space, whose secret meaning and presence is known only to sender and receiver. And an instant after it is delivered there is not one shred of evidence, nor even a record of any kind by which the message can be deciphered into the "clear." Such is the blitzkrieg in the cryptographic battle of radio in World War No. 2.

A practical illustration will be far more effective, perhaps, than dissertations in history and literature. Not long ago, a former world's heavyweight boxing champion, in an interview on a major network of thirty-nine United States stations, capable of being picked up over thousands of miles, broadcast a message in the most simple jargon code, so simple that any amateur cryptographer or alert listener should have made it out. The broadcast had a potential audience of twenty-eight million radio homes in the United States alone. Evidently not a single listener caught the message because not a single listener was expecting it. The message was: "S 112—SS. *Queen Elizabeth* sails tonight with hundreds of airplanes for Halifax, N.B." Neither the sponsor, the network, the world's champion, or the sports commentator interviewing the champion knew anything about the message. This particular message, of course, was only sent out as an experiment to see whether anyone would pick it up from the air waves. But if such a message can be sent, with millions listening in, is it safe to assume that there have not been far more important uses made of this agency here in America.

If radio could be used with such devastating effect in Europe, it can be used here with even more telling effect. In America, because of our commercial radio system, our programs are the best in the world. Single radio performances of many of our network programs would be events of outstanding importance in other countries. As a result, we have by far the greatest radio-listening audience in the world, and in no country can more people be reached by radio than here. Also, in no country is there any greater freedom and tolerance. All these facts, it seems most evident, constitute a new and serious military problem.

There are some 813 commercial (long-wave) broadcasting stations in the United States, over six hundred more than in all Europe combined, and in addition, all of ours are privately owned. Then there are thirteen short-wave stations, twenty-one television stations, and sixteen facsimile stations. There are over fifty-three million radio receiving sets, including eight million automobile sets, in the United States, and a potential audience of over one hundred million. The problem of planning the control of radio by the War Department to cover both prewar and wartime necessities is staggering. All stations should be carefully guarded or controlled:

(1) Against cryptic broadcasting, which either relays military information by enemy espionage agents, or coordinates fifth column activities, this in addition to providing ordinary censorship of news that might be of value to the enemy.

(2) For the broadcasting of propaganda and information to combat the enemy's short-wave propaganda which would be intensified in case of war (there are many foreign short-wave broadcasting stations easily picked up here); also propaganda to serve as a deterrent against fifth-column activity.

(3) For the proper kind of recreation and morale-building entertainment, which would require minimum attention from the War Department, since this is a radio station's ordinary service in peacetime.

(4) In order to minimize or neutralize the effects of possible physical seizure by enemy armed forces or the fifth column.

According to report from excellent authority, though so far unconfirmed, the break-through at Sedan on May 14, 1940, which caused the separation of the Belgian and English forces and the French Army of the North from the main French Army and resulted in the encirclement and destruction of the northern units and the final crushing of France, was a German victory in the radio war of cryptography. Over one of the government-owned and -operated stations, spies or traitors concealed messages in code appraising the Germans of the thinly held line at the elbow between the Maginot and Little Maginot Line, and of the temporary gap between the armies moving rapidly into Belgium and the few divisions under General Corap holding the northern end of the Maginot Line. If this report is true, it shows that government-owned stations are as liable to subversive use as stations privately owned. It also proves that the Battle of France was lost in large part by radio.

This is doubly strange when one considers the fatalistic parallel this war has with World War No. 1. In World War No. 1, the turning point was the Battle of the Marne. It was won by radio. In 1914, however, there was little radiotelephony, but much radiotelegraphy. The air was filled by radio traffic with many jammed wave lengths. French, British, Belgian, and German communications transformed the German offensive into a mess of faulty coöperation. On September 2, 1914, von Kluck was ordered to close up on von Bülow to his left and push the French away from Paris. He never received this message, but the French did. He radioed that he was following his original orders to swing southwest to Paris. This message was also intercepted by the French, but never received by the German GHQ. The French cryptographers laid the deciphered messages side by side before Joffre, and from them developed the Battle of the Marne, won by radio and cryptography.

However, ordinary military radio telephonic or telegraphic messages, their interception, and the cryptography relating to them, do not constitute, strictly speaking, a new problem. Although perhaps more complex now than it was before, and more exacting, particularly with respect to time, this is a fairly established military problem handled by the Signal Corps. According to the latest booklet on our armed forces, *The Army of the United States*, the Signal Corps is charged with intercepting enemy radio messages and locating enemy (military) radio stations by radio goniometry.

The new military problem which is the subject of this article is more in the province of the Military Intelligence Division (G-2) which has duties "that relate to collecting, studying, analyzing, and furnishing all kinds of military information," which "supervises any army activities dealing with military surveys, maps and photographs, codes and ciphers, and translations," and which "also directs a Press Relations branch which prepares and issues War Department press releases and handles other matters concerning relations with the press and with the public at large." To these extensive duties must be added the new military problem of radio propaganda and counter-propaganda, fifth column and counter-fifth column radio activities, and the audio-aspects as against the transmitter aspects of radio from the creation and production of radio entertainment to preventing fifth column or espionage secret communications by way of radio.

The problem does not always stop at any given line nor is it any too well-defined. Here, for instance, is an actual case: One of the most powerful short-wave stations in Europe, heard all over the world, often emitted either before or after a scheduled evening broadcast a buzzing signal resembling static, so fast in vibration it would not be recognized as consisting of separate noises. However, that was not the answer. The noise was actually a message concealed not only in code or cipher, but by speed of transmission, and intended for their nationals in a country six thousand miles away. First the message had been recorded, and then the record was broadcast as played at perhaps ten times the normal velocity. The key to its reception and solution lay, of course, in reversing the operation.

Returning again to the four points of control which together represent the new military problem of radio, we can label them:

(1) Espionage and fifth-column cryptography and censorship;
(2) Propaganda and counter propaganda;
(3) Recreation, entertainment, and morale-building;
(4) Neutralization of physical seizure of stations by enemy or fifth column.

These form a staggering new assignment for the Intelligence Division of our service. And on the basis of European experience, they offer as vital and as difficult a problem as any encountered in the warfare of 1940.

With regard to espionage and fifth-column cryptography and censorship, it will be well to explain and describe in detail how a message can be inserted in a commercial radio program broadcast. It should be clear that if by the adaptation of a well-known system a cryptogram can easily and secretly be transmitted through audio means and doubly concealed in the music, sound effects, and dramatic dialogue of the program, superior cryptographers would have no trouble doing a far better and more original job for espionage purposes or for the organization and control of a fifth column.

While many different methods can be used to conceal a cipher or code message in a radio program, including simple jargon, the most obvious cipher is the radio equivalent of the grille or "cardan" method, in which the sender writes his "clear" through the holes of the grille, the letters following the order of the numbered grilles, and then fills up the vacant spaces with innocent letters to make a message. In radio, actual words in most cases could be used as letters, and the grille replaced by key numbers, all based on the order of words in the program from its beginning, or from some key word. Here the difficulty of even suspecting, much less deciphering without both a recording and stenographic transcript of the broadcast, is to be noted. This is what makes sending and receiving cryptographic messages by radio easier than their discovery or prevention.

A reverse of the Gronsfeld cipher especially adapted for radio can also be effectively used. In the Gronsfeld, there is a set of key numbers in a series that can be easily memorized. These numbers are written down over the "clear" and repeated as often as necessary. Each letter of the "clear" is then represented in the written message by a letter which is the number of letters further in the alphabet called for by the key number over it. In the radio adaptation, a key word would be written down over the "clear" and repeated as often as necessary. Each letter of the "clear" can then be represented by a number equivalent to the number of letters in the alphabet separating the letter of the "clear" from the corresponding letter of the key word. In the radio program, words with the number of letters equivalent to those numbers could be designated at indicated spots or key breaks.

However, the most effective and practical cipher which would lend itself to radio is what might be called a radio adaptation of the Nihilist Bacon biliteral.

In this system, the key is a square as follows:

	2	3	4	5	6
2	A	B	C	D	E
3	F	G	H	IJ	K
4	L	M	N	O	P
5	Q	R	S	T	U
6	V	W	X	Y	Z

In writing the cipher, the numbers describing the position of a letter (its coördinates) are substituted for it. In the original, the numbers start with 1, but due to the fact that here also numbers of the message will be given by the number of letters in a word in the radio program, there are too few one-letter words to make the original key practicable. In writing text for the radio enciphered by the double-transposition system as explained above, it is necessary to assign them some definite words or order of words, the number of letters of which will indicate the message. For instance, if the second and fifth words after every musical theme, bridge, curtain, or sound effect (all of which are called "business" abbreviated BIZ—in radio work) has been agreed on, a sample written transcript of part of a program (involving an Oriental servant and a man as characters) follows:

PING: If patiently waiting, all things coming, thank you.
BIZ: KNOCKS ON DOOR.

5 2
MAN: Well—*Fancy* that—Who *is* that?
PING: No doubt knock on door meaning honorable self soon in bathtub, thank you.
MAN: I can't believe it. Open the door.
BIZ: DOOR OPENS.

2 6
PING: Prediction *is* correct. Like *humbly* to present servant with humble liquid for bath.
MAN: Humble liquid for bath, eh? What is this humble liquid?
PING: Humble liquid very fine product of most noble cow.
BIZ: BUCKETS DEPOSITED ON FLOOR.

2 5
MAN: Cow? *Is* that stuff *there* milk? I'm supposed to take a bath in milk?

PING: Water very scarce. Milk very plentiful.
BOTH: Thank you.
MUSIC: FANFARE.
ANNOUNCER: The Foods Reel reels on!

The message would therefore be: 52—26—25, or by reference to the table, the "clear" would be: QED.

The most important fact in radio cryptography is the fact that while the sender and receiver need only worry about the key words, a recording and actual stenographic transcript of the program as it was actually broadcast must be obtained before a cryptogram can possibly be discovered or deciphered.

As for censorship, unfortunately, radio can sometimes do just as much harm in war for lack of efficient censorship as through enemy cryptography, in giving away military secrets or aiding fifth-column organization. In Europe, especially in Belgium and France, where listeners were so used to accepting news and announcements on government-controlled stations, lack of confidence and suggestion of catastrophe made thousands leave their homes and block the roads, thus to nullify military defense measures. Many broadcasts, no doubt by fifth columnists, urged the populations of whole cities to surrender or run. If anyone doubts American mass reaction to radio, one has but to remember the famous *War of the Worlds* broadcast which completely disrupted a quiet and peaceful New Jersey countryside. Perhaps H. G. Wells did not discover a secret weapon, but Orson Welles discovered that radio was certainly a weapon through which man's mind and imagination could be successfully attacked.

With regard to propaganda, it is a fact that there are definite propaganda short-wave programs already reaching America. In addition, there are definite programs and a considerable number of domestic broadcasts in foreign languages aimed at the large colonies of foreign-born.

In Europe, before and during the war, German propaganda by radio was as far ahead of the French and English as German superiority in military equipment of ground and air. Many times a week, at regularly scheduled times, outstanding symphonic concerts featuring French music or radio adaptations of French musical comedies and *l'Opéra Comique* were broadcast all over France by German stations. These programs built up a tremendous audience because of the superiority of their entertainment and production. They could be compared with certain commercial advertisers' programs in the United States, which through superior entertainment such as Charlie McCarthy and Jack Benny, attain such tremendous audiences that the networks have hard work selling any time competing directly against them. In other words, in radio propaganda, as in radio advertising, "the show's the thing." The size of the audience is directly in ratio to the entertainment and showmanship of the program.

After obtaining a large audience by superior entertainment, an advertiser in America takes care to see that his commercials sell his product and are as sugar-coated and inocuous as possible. In the more serious game of selling ideals and ideas, races, countries, and man, radio propaganda and counter-propaganda have become correspondingly adept.

In the German broadcast featuring French music and drama, occasionally a French speaker spoke to the French people explaining that Germany definitely did not want to go to war with France. That the social advantages in France were only a beginning, but that France was still in the grip of capitalists, and that the French people were forced to fight for England and her economic control of the world. This was all done in excellent taste, with superior production and accurate statistics, and featured native Frenchmen or Germans speaking perfect French. In England, the propaganda took a different tack, and from September to May millions of English and French soldiers listened to Lord Haw Haw and Paul Ferdonnet prove that they were fighting for nothing.

How efficient this invisible weapon can be is evidenced by "The Link," an English fifth column of English Fascists meeting regularly in London. It can be positively stated that this organization owes more to radio than to any other single factor. When Fascist Sir Oswald Mosley visited Paris as a member of the British fencing team at the world's championship a number of years ago, he was wined and dined by the radio executives of the government radio agencies of France, Italy, Belgium, Holland, Germany, and, strangely enough, Denmark, and also by the owners of several of the few commercial stations on the Continent.

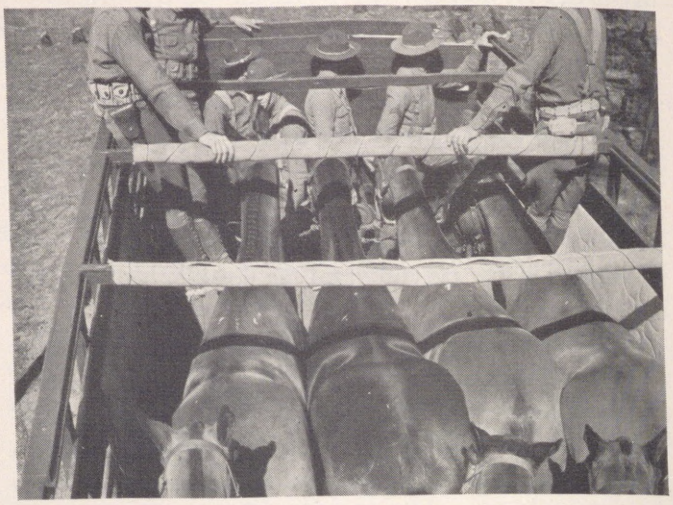
The importance of the radio weapon is still paramount in the most militarily efficient country in the world. On June 27th, the German advance guard arrived at the Spanish-French border. The first German unit to reach the border consisted of twenty specialists of the radio-propaganda section travelling in radio-equipped trucks. They stated to correspondents that they broadcast many times a day both from their trucks and from radio stations taken over in their advance.

Yes, mastery of the sea may be vital to England, mastery of the air may win the present war for Germany, but mastery of the minds and hearts of men must be gained today to wage war successfully, and that mastery can only be attained in full by radio.

In a visit to England just before the war, it was my very good fortune to discuss World War No. 2 with my friend, the late Sir Basil Thomson, who was head of Scotland Yard for eleven years and head of the British secret service in World War No. 1. His last remark to me was, "Remember that in the next war, radio will be the secret as well as the invisible weapon one always wonders about when a new war comes along." I now know he was right, and I hope that this article may at least serve to prevent its readers from underrating the problems created by this new weapon.

THE FIRST CAVALRY DIVISION IN

Cavalry scout car in action, Louisiana maneuvers



Portee Cavalry entrucking, Louisiana maneuvers

FOR the first time since its organization, the 1st Cavalry Division left the desert country of the Mexican Border, and went to the wooded areas of southern Louisiana. Many are the maneuvers that the Division has engaged in among cacti, dry arroyos, and glaring sand, but this one among pine woods, green fields, streams and rivers was a new experience for all.

From Fort Bliss to Fort Brown, a distance of 800 miles, the division converged in twelve trains and nine motor serials upon an assembly area south of Jasper, Texas. In forty-eight hours the division had detrained, detrucked, and encamped in a concealed bivouac area of about four square miles. This movement was accomplished with such smoothness and efficiency as to bring favorable comment from the Corps Commander.

The 1st Cavalry Division, 2d Infantry Division, 4th Cavalry and various Corps Troops formed the IX Corps. This Corps acted as a "guinea pig" against which the IV Corps tried out its streamlined divisions. The IX Corps with about half the strength and with a most unusual composition, engaged in some very instructive exercises. The 1st Cavalry Division proved to be a cohesive unit, well knit, and capable of performing any mission assigned to it. However, due to the organization of the IX Corps, it was frequently impossible to employ the Cavalry Division in the way the Commanding General desired, or in accordance with its normal rôle. Its use, therefore, conformed to the exigencies of the various phases of the maneuvers.

* * *

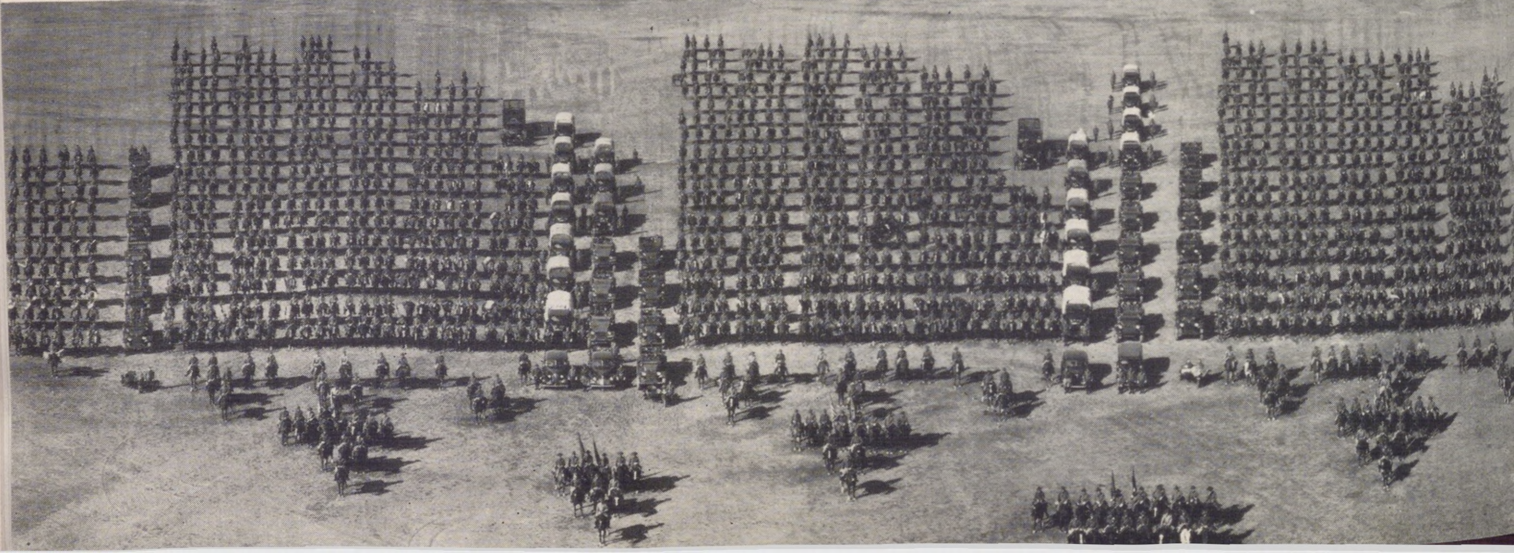
During the Corps and Army maneuvers several long and difficult marches were made by units of the division. Outstanding was a march of 78 miles in 36 hours over a flooded area. Worthy of note were the marches of an entire brigade of 60 miles in less than 19 hours, and a regiment of 75 miles in less than 24 hours. For a considerable amount of these distances units were opposed by enemy forces and were forced to maneuver under tactical conditions.

Despite the distance covered, the Cavalry Division went through the entire maneuver with the loss of but one animal, an artillery draft horse twenty years old. This record is believed to be preëminent as an example of horsemastership.

---

*Extracts from an article prepared by Major Vance W. Batchelor, G.S.C. (Cav.), and Major Charles H. Noble, G.S.C. (Cav.).

1st Cavalry Divis



THE THIRD ARMY MANEUVERS*

The marching of the 82d Field Artillery and the dependable and prompt support furnished by this unit at all times is especially commendable.

During the last two weeks of the maneuver the division was forced to form a remount depot to care for surplus animals. This became necessary due to injuries of personnel and to the termination of active duty of a large number of Reserve Officers prior to the completion of the maneuver. It has been the experience of this division that on short maneuvers casualties of men exceed those of animals.

Due to heavy rains streams were often at flood stage. Units as large as squadrons either found fords or resorted to swimming but were never stopped by these unfavorable conditions.

Much credit is due the 8th Engineer Squadron for road reconnaissance, and repair of roads and bridges as well as actual construction of bridges when necessary. In two instances the Engineer Squadron ferried the first waves of cavalry across streams in assault boats when the enemy had (theoretically) destroyed bridges. In addition to these useful tasks the Engineer Squadron established water points, built and defended road blocks, and continually assisted the movement of combat and supply vehicles of the division.

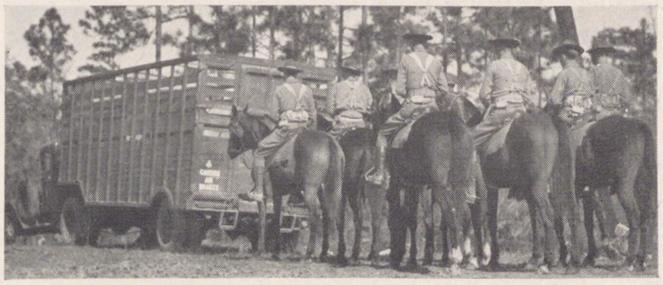
The communications as maintained by the Signal Troop were adequate throughout. Wire between the division and each brigade, and often to include the division reserve and administrative installations were almost constantly maintained in tactical situations. This means of communication proved invaluable in the efficient tactical handling of the division.

* * *

In the words of General Joyce, the Division Commander:

"The principal lesson learned by the First Cavalry Division at the Louisiana Army maneuvers was the necessity for added fire power—greatly increased numbers of anti-tank weapons, medium artillery for counter battery and general support missions, and the added rifle strength in squadrons that the third troop will give.

"Old truths were brought home and made most apparent. The prime one among these was that the advantage lies with the offensive and the initiative that accrues from it. In this day of motorized and mechanized units it is much easier to thrust than to parry. The spirit of the offensive, celerity of movement, and resourcefulness that surmounts all obstacles can accomplish almost unbelievable results. Incidentally, this thesis has recently been most adequately demonstrated in Holland, Belgium, and France.



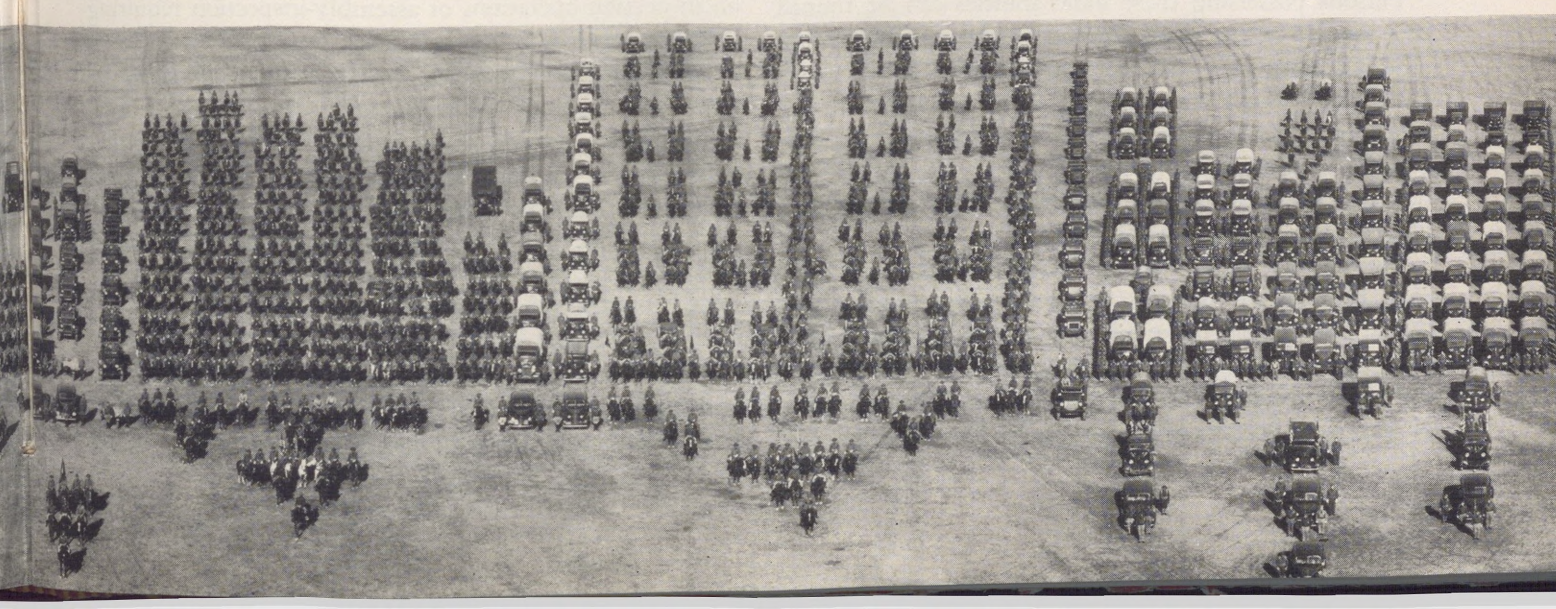
A Portee Cavalry squad ready to entruck, Louisiana maneuvers

"Coupled always with drive forward and the will to win must be fitness of horses and men that have been welded into units tempered and basically sound in all that pertains to offensive combat.

"Horse cavalry is still preëminent on the actual field of combat when it is properly armed, boldly led and adequately supported from the air and on the ground. Its ability to displace fire power and gain vital positions on the flanks and rear of an opposing force make it a combat arm to be reckoned with and feared on any battle ground. The worse the terrain and the more trying the weather conditions the more its potency is evidenced.

"The results obtained during the Third Army maneuvers in Louisiana demonstrate that our Army doctrine for the use of horse cavalry, as exemplified by the First Cavalry Division, is sound."

sion Fort Bliss, Texas



PSYCHOLOGY AND MODERN WAR

Major Charles A. Drake, Infantry Reserve

Psychology made its first and most brilliant contribution to the military service through the famous Alpha and Beta Intelligence tests that were applied to millions of officers and men of the World War army. These tests were amazingly successful in identifying those individuals of high mental alertness who were the best bets for further training, particularly for training as officers. The high standards set by these early group tests of more than two decades ago have scarcely been surpassed by the more recent tests.

Toward the close of the World War still other tests were produced that were useful in the quick identification of persons possessing knowledge of particular trades, plumbing, steam-fitting, and the like. These tests, supplemented in some instances by quick practical tests in actually wiping a lead joint or threading a pipe, facilitated the classification and assignment of trade specialists required in construction, maintenance, and the technical services.

The increasing emphasis upon mechanization in the armed forces, the newer and more complicated weapons, and the large number of new types of labor-saving devices useful in production, handling, and storage, made a new demand upon psychology. Trained men for the handling of this technical equipment exist only in small and totally inadequate numbers. Quick training of large numbers of such specialists will have to be undertaken.

Training on mechanical devices succeeds best and quickest when the trainees possess the basic aptitudes required by the job. The problem therefore becomes one of identifying, prior to selection and training, the individuals possessing the required aptitudes.

In the light of recent advances in industrial psychology, this is no longer the simple problem of selecting persons of a general mechanical aptitude or a so-called mechanical intelligence. The problem becomes one of specific analysis of the basic abilities in visual perception, auditory perception, two-hand coördination, hand-and-foot coördination—to name only a few—required for superior performance on the job.

Persons possessing these basic abilities can be trained in a fraction of the time required by the average person. The reduction of a standard training time of six weeks to only two weeks is commonplace. Inexperienced industrial employees selected by suitable aptitude tests have attained performances in two weeks at 113 per cent of normal, as against the 100 per cent level of average employees of years of experience.

Increases in production on the job as high as 60 per cent, by selection alone, have been demonstrated. Selection supplemented by suitable training can even increase this gain materially. This is not the result of incentives or the forced speeding up of the work, but solely the effect of choosing persons who can easily achieve the hand, hand-and-foot, or eye-hand coördinations called for on a particular job.

Consider this example. Everyone is familiar with the circular typewriter eraser to which a small bristle brush is attached. The cycle of hand operations in making the fixture in which this article is assembled bears a striking similarity to the cycle in the operation of the 37-mm. cannon. Successive operators on this fixture were scarcely able to earn the basic piece-rate wages and were obviously working under great strain. They were changed frequently because of their dissatisfaction.

The job called for two-hand coördination, a fair level of visual perceptual ability, and eye-hand coördination. An operator was selected finally who had a high score on each of the tests of this ability, with resulting earning of 140 to 160 per cent of normal or standard. Production was increased, earnings increased, and dissatisfaction ended. What might such an increase represent in the application of infantry or cavalry weapons?

As another example, consider this case. A job was set up on a power-operated press requiring the handling of two sets of parts simultaneously. Each hand picked up a bottom unit and placed it in the die; returned, picked up and placed the middle units; returned again, picked up, and placed the top units. A pressure with the right foot on a pedal operated the press and swaged the parts into two complete articles, which were then removed by simultaneous motions of the two hands. The job was set up as straight piece-work at a rate that would yield $16.00 a week for an average operator. Simple analysis showed that dual-hand and hand-and-foot coördinations were the special abilities required.

An applicant was selected who had high scores on two tests measuring these basic abilities. The first week he earned $26.00, the second week $28.00. When we asked him why he did not earn the $32.00 the tests indicated he could earn, he replied that the foreman had warned him "not to go so fast and spoil the rate for everybody." While he was a superior operator on this job, other test results indicated that he would have been a below-average performer on inspection operations or assembly-inspection requiring visual perception.

Probably most significant for the military service is the recent discovery of the wide range of visual perceptual ability among persons whose eyes are found to be normal on the usual eye examinations. It is as true in the Army as it is in baseball that "you can't hit what you can't see." An individual may have perfect vision but still function at a low level of visual perceptual ability, unable to see what he should see for effective performance.

This perceptual ability is not related to intelligence, as the latter is usually measured, and is consequently not revealed in intelligence test results. Since neither the eye examination nor the intelligence test will detect it, its measurement calls for special forms of tests. Some of these special tests exist and have already demonstrated their worth in selecting inspectors for factory operations.

The need for quick and accurate inspection of mechanisms in the manufacturing process, to guarantee their performance in the field, is evident. Quite as important, perhaps even more so, is quick and accurate perception in handling such mechanisms. Training time for such handling can be greatly reduced and the level of effectiveness of such handling can be greatly increased by selection based upon measures of this basic ability.

Until recently it was taken for granted that intensive and prolonged training would offset the lack of such specific aptitudes in the trainees. But repeated applications of suitable tests, both in the area of perception and in motor coördinations of body muscles have shown only small gains wholly out of proportion to the time and effort expended in training, and sometimes no gains at all.

Even in the relatively simple task of coördinating the two hands in dual operations, in which two objects are manipulated simultaneously, wide differences appear. Some individuals can increase their production as much as 55 per cent by dual operation as against one-hand operation, while others can actually do less with two-hand or dual operation than by one hand alone. These differences seem to be innate, basic, and exceedingly resistant to training.

Some gains in eye-hand coördination are shown as the result of intensive training. This is the area of great importance in the aiming and firing of service weapons. But as a rule, these gains come slowly, at great cost in time and training effort, and inferentially, at great cost in the expenditure of matériel.

With our present industrial experience and the techniques now available, it should be no great task to develop suitable tests for the operators of every cavalry weapon. The method of analysis of the basic human abilities called for in the loading, aiming, and firing of a rifle, or the cycle of similar operations of any other weapon, is well established. The design and construction of suitable tests for the abilities called for is relatively simple. The results from the applications of such tests will then make possible the early selection of the men who are to receive the special training required.

One interesting feature of such tests, as they have been applied in industry, is that trained and experienced operators do not make materially better scores than they made before their training and experience. This is evidence that the tests are measuring innate, basic abilities. If the later test scores were significantly better than the earlier ones, the improvement would indicate that the gains were due to experience and skill.

It is because of this characteristic of real aptitude tests, their measurement of inherent or native abilities, that they can be used so successfully for selection of personnel prior to training. This makes it possible to eliminate the long delays and the wasteful trial-and-error that characterize selection and training when not aided by measures of basic abilities. It must be noted in this connection that we do not make direct measurements of the aptitudes themselves. We measure certain performances that require basic abilities and from such measurements *infer* the amount of aptitude shown.

As the last war made such striking contributions to the instruments and techniques for testing intelligence, so will the next war probably make its greatest contribution to psychology in the further development of aptitude tests and techniques. Time becomes an increasingly important factor, particularly in training, while skill acquires a new importance in the effective employment of mechanized equipment. The new demands can and will be met by services that psychology is now ready to supply. As the war will contribute to the development of psychology, so will psychology in turn contribute to the winning of the war.

☆ ☆ ☆ ☆

"If the trooper of the twentieth century is to fulfill the conditions of efficiency, not only must he be a picked man, but his faculties for training must be ample, his education protracted, and his instructors and leaders men of exceptional capacity."

General Hawkins' Notes

Hindsight Strategy and Tactics

The European Operations

Hindsight is easier than foresight; nevertheless, we should not fail to profit by it for the future.

It is interesting now to note the strategical and tactical elements which contributed to the defeat of the Allies in Belgium and France in the present war.

The Allies were at a strategical disadvantage from the beginning. It is not desired to go into the political causes which were partly responsible for this situation. The facts are that the refusal of Belgium to permit the English and part of the French troops to go into Belgium and fortify the line of the Meuse River and the eastern frontier of that country before the German attack on the 10th of May last, caused the English and French Armies to occupy a poor strategical position. The eastern side of Belgium was fortified but not at all with the strength of the Maginot Line. But even though the Maginot Line had extended all the way up to Liege and north along the Meuse, it is probable that the Germans would have broken through somewhere. The overwhelming strength of the Germans in men and equipment would probably have succeeded since they also had the initiative due to their assumption of the offensive.

When two armies of equal strength are opposed, the one that succeeds in seizing the offensive has a great advantage, at least temporarily. Contrary to the assertions of certain pseudo military experts, which seem to have exerted much influence among the Allies, this is always true. But due to the great disparity in strength on the Western Front after the Germans had finished with Poland, and the inability of the Allies to use Belgium as a theatre of operations for a turning movement at the beginning of the war, any Allied offensive was out of the question. Even though Belgium had declared war in September of last year, the combined French and Belgium armies might not have been strong enough for an offensive since the British were not ready to contribute any material forces.

Thus, the Allies found themselves in the spring of 1940 with the greater part of the French army practically shut up in a fortress, the great Maginot Line, or behind it, while the British army, and some of the French, were in a position of readiness to move up into Belgium to support the Belgian army should the latter be attacked. This situation actually suggested and finally led to the great break-through in the center which subsequently separated the British and Belgian armies from the main body of the French army and brought about the great disaster.

Having had the defensive attitude forced upon them by the great superiority of their enemy, and certain political conditions, the Allies had recourse only to stubborn resistance and the hope that superior tactics might enable them to counterattack when opportunity afforded the chance and thus turn the tables on the Germans. It was a slim hope, considering the strength and coördination in the German army, but they little appreciated how slim it was on account of their inferior equipment and lack of tactical imagination. Whatever may have been the political reasons for it, the Allies were greatly inferior in air force and in mechanized forces. They had not had time to remedy this disadvantage after war was declared. But they were also inferior in the number, quality and organization of their antitank guns. They had not used well, in this respect, the eight months they had before the great attack.

It was obvious, after war was declared, that the Allies could not hope to equal the Germans in the number of tanks of various weights, or of airplanes, or indeed of troops of all kinds, for a very long time. It was necessary to fight a defensive war for the time being. Therefore, the tactics chosen for the use of such mechanized forces as they had, and for the use of air force should have been adapted to this fact. They might have worked feverishly to produce antitank guns in sufficient numbers and quality to stop the tanks they knew the Germans had. This would have taken thousands of these guns. Furthermore, the antitank units should have been organized into separate mobile battalions assigned to divisions and army corps as well as small detachments assigned to regiments. They should have made sure that the calibers of these guns were large enough.

Then, the tactics for the repulse of German mechanized forces should have been to retire their infantry in the face of such an attack, leaving the antitank guns deployed in successive lines in staggered positions. Being on the defensive, the Allies should not have tried to use their mechanized forces to repulse or check the similar forces of their enemy. They should have held them in reserve and waited until their antitank guns had dealt with the enemy tanks. When the German tanks had been thus shattered or crippled, then the Allied tanks should have moved forward in counterattack followed by deep columns of infantry. By attacking the German tanks before they were destroyed or crippled by the antitank guns, the Allied tanks were wasted. At most they effected only a check and were destroyed. This is not the proper use of tanks by the army on the defensive. That the proper kind and number of antitank guns can stop tanks is proved by the fact that the French and British mechanized forces were not successful in their attack against German infantry.

The German air force, used correctly as it was, made it difficult for troops in defensive positions and for their command posts and reserves to function. It would seem that the Allies should have used their entire air force to counterattack against the German airplanes that were so effective against the defending troops as to permit the German tanks to break through. As far as we know now, the Allied air force was used mostly on objectives well in rear of the German attacking columns. They should have been concentrated against German motorized infantry and any heavy columns near the front, not those in back areas. This shows the necessity of having powerful air forces under the orders of army corps commanders instead of having an entirely separated and independent air force as they have in the British defense system. *It shows the wisdom of our War Department in combating the often-proposed scheme to create for our national defense three separated and independent forces*—the Army, the Navy, and the Air Force. It is to be hoped that our air forces will continue to be divided between the army and the navy. In the army, our air force should be entirely assigned, part as the G.H.Q. air force, part to army commanders and part to army corps commanders, with smaller elements assigned to divisions as they may be needed. The Chief of the Air Corps should not be a field commander, but a chief like the Chief of Field Artillery. The weakness of the British system has been demonstrated, although the Royal Air Force has apparently done very good work in other fields.

When the Germans broke through the center near Sedan, it would seem that the great danger of being split in the middle with the consequent separation of the British from the French armies, would have been so appreciated by the high Allied Command that the whole British army should have been broken away from the operations in Belgium and turned south to attack with the greatest energy the Germans in flank. The Belgian army could have covered this movement and then endeavored to join the British, leaving Belgium to the Germans as King Albert did in 1914. This would have exposed the channel ports in Belgium but not in France. This happened in 1914 without very great disadvantages to the Allies. The object at once should have been not to save Belgium but to reunite the Allied armies. By delaying this effort it became too late to make it effectively. The Germans pushed thousands of troops behind the tanks into the "bulge," as it was called in our newspapers, and widened it by heavy columns of infantry pushing to the right and left while the tanks, with their airplane support, and followed closely by motorized infanrty, pushed straight ahead. The bulge was made strong at its base and wider and wider as it progressed forward. Thus, the principle of pushing in reserves where the going is good rather than reënforcing troops that have had hard going is exemplified.

The Germans repeated this sort of operation in various places along their front until the fall of Paris. In the absence of sufficient numbers of antitank guns the Allied infantry and artillery could not stop them. The Allied tanks were hurled at the German tanks and thus destroyed without effecting anything more than a temporary check. This is exactly what these Notes predicted last winter would happen if the Germans broke through in the spring and the Allies attempted to use their mechanized forces to counterattack against German tanks.

Inferior numbers of mechanized forces are no good against superior numbers of mechanized forces, because these forces are incapable of any other kind of action than charging straight into the enemy. They are not like infantry or cavalry, especially cavalry, which can fight delaying actions and then get away if they cannot repulse the enemy. Therefore, *an army inferior in mechanized forces to the enemy should resort to antitank guns;* and it should use its mechanized forces, as before described, to counterattack after the antitank guns have crippled the enemy mechanized forces. No reliance can be placed in mechanized forces alone for delaying actions.

Delaying actions must be fought by mobile units of antitank guns and cavalry.

Thus, defensive measures are different from offensive measures. Eventually, only the offensive can win. But initially, the weaker army hopes by skillful defensive tactics to hold off the stronger army until time and other circumstance has permitted the manufacture of armament and the building up of the army so as to face the enemy on equal terms or even superior terms. This is a doubtful expedient, but it is forced upon any nation that is inherently weaker than a possible attacker or which has allowed its defensive forces to become inferior.

And again, one part of an army may remain on the defensive temporarily while another part attacks.

So, defensive tactics must be studied by soldiers quite as much as offensive tactics. What is necessary is to understand that they are different, and how they differ.

We have pointed out some of these differences in the use of air force and mechanized force. It is a notable fact that cavalry also can be used offensively or defensively, and that one is quite as important as the other. In spite of certain sarcastic articles by certain columnists and others levelled against the cavalry, we insist that we know a little more about this subject than they do, and we prefer to rely on our own knowledge and reason more than on theirs. There is no question in our minds that a very numerous cavalry, properly armed, trained and led, could have been of very material help to the Allies in France. We have indicated many times in these Notes how such a cavalry could contribute important services in a defensive campaign as well as in an offensive one. We shall now use one of the many instances in the recent campaign in France to again indicate the usefulness of cavalry even in a theater of highly mechanized forces.

Let us suppose that, at the time of the great break-through near Sedan, the British army had possessed fifty thousand cavalry and the French army had had one hundred thousand cavalry of the kind we have in mind. This cavalry is composed of riflemen armed with semiautomatic rifles and pistols with grenades available when desired. It has numerous machine guns; it has *squadrons of antitank guns*. These antitank guns may be lighter than those needed by the infantry, so that they can be packed on horses or drawn on light carriages, but they must be capable of stopping light tanks and of harassing medium tanks. It has very mobile horse artillery equipped with 75-mm. howitzers. It has a certain proportion of mechanized cavalry brigades. It has at its call certain units of observation airplanes, and certain other units of bombing airplanes. It has engineer and signal troops. Important as it is, we cannot, in this brief paper, go into its supply and medical organizations. All troops must have these.

When the break-through occurred, the advance elements of the Germans were the tanks. They kept right on going for a deep penetration. They were followed by motorized infantry. If the British cavalry, assuming they had it, held in reserve and fifty thousand strong, had immediately turned south and, going across country, attacked the right flank of the motorized infantry with all the fire power it possessed, that infantry would certainly have been halted for an appreciable time. If the French cavalry, on the left of the bulge, had attacked in a similar manner the left flank of the German motorized infantry, further delay and confusion would have ensued. The German tanks would have left their motorized infantry far behind. French infantry might have had time to close in on both sides of the bulge. The British infantry, north of the French, would be on its way, leaving only containing forces to assist the Belgians in a slow withdrawal in front of the advancing Germans in Belgium.

A decided success might have taken place and the disastrous separation of the Allied armies avoided. Here would be shown the advantage of having strong forces able to move rapidly across country. If in addition to having this cavalry, the Allies had had substantial units of antitank guns, and had now used their mechanized forces in rear of the advanced German tanks, the latter might have been trapped. Other Allied mechanized units might have attacked the German infantry rushing up to reënforce their troops in the bulge. A skillfully handled situation like this might have saved France. Who knows? But certainly an army fighting for its life and the life of its country should use every possible known means of action. *The cavalry is one of those means of action.*

They had deliberately deprived themselves of this means by disbanding their cavalry because of the theories of pseudo experts and chiefs without imagination and without knowledge of an arm that all Great Captains through the ages have known and used to make themselves great. Although infantry is the principal arm, and new and very important arms have made themselves indispensable in modern warfare, no commander can become a Great Captain who does not understand how to use cavalry. And, first of all, he must see to it that he has cavalry at his disposal. He cannot use it if he has not got it.

It is realized that there are many who think that cavalry is too slow for modern campaigns in view of the increasing proportions of mechanized forces as developed recently and the numbers of infantry that are being motorized. Attention may be called, however, to the fact that the larger part of all armies including the great German army, is composed of marching infantry and horse-drawn artillery. It is this mass of troops that is depended upon for the smashing victories that we have read of in the latest campaigns. The German tanks have been successful only because of the support they have received from superior air force and the blind failure of the Allies to provide their armies with the necessary antitank guns, as before explained. The means to stop tanks are simple but expensive. But not as expensive as the tanks themselves.

If mechanized forces are stopped by guns, and the air force is neutralized by opposing air force, the slower moving cavalry in its old rôles in coöperation with infantry should have no trouble in traversing the necessary distances. Motorized infantry would be helpless were it not for the presiding successes of mechanized forces. Learn to stop mechanized forces and we have limited the value of motorized infantry to that of infantry transported in railroad trains for strategic purposes, or to that of motorized infantry following cavalry. Furthermore, if the French and British infantry were able to retire in front of the mechanized thrusts of the Germans as far as they actually did in Belgium and France, it must be conceded that cavalry could have kept abreast of the proceedings. A modern heavily armed cavalry, able to move more rapidly across any kind of country than infantry and across almost any country faster than mechanized troops, should certainly be able to make itself important in any campaign.

But one should not expect a simple division of cavalry to accomplish much in a theater of operations where there are hundreds of infantry divisions and many mechanized divisions. This disparity does not give the cavalry an opportunity to prove its value. Furthermore, as often pointed out, the high command must know how to use its cavalry. And cavalry division commanders must know how to handle their divisions without ponderous orders of the stereotyped pattern. During the maneuvers in this country of last winter and spring, one could not suppress some amazement upon reading some of the criticism army commanders made of the cavalry to the effect that it was road bound and that it failed to use security detachments skilfully. Ability to move across country is the very essence of cavalry effectiveness in order to take short cuts and to keep concealed from observation. Cavalry should keep off the roads except when very distant from the enemy or when the terrain is so thick or broken that it is impossible for troops to traverse it. The skilful use of covering detachments used to be so stressed that it is hard to understand any neglect in this respect. With good leadership in the large units there should have been no occasion for such criticism.

There has just appeared in headlines in the newspapers that twelve hundred Italian cavalry were routed by two British armored cars in north Africa. The despatch included the statement that this incident proves the superiority of the new (mechanized) cavalry over the old. How certain persons do like to disparage the cavalry! The headlines did not mention that the same two armored cars routed a battalion of infantry. The incident merely proved the stupidity of this particular cavalry force. We have known for over twenty years that a cavalry force without antitank guns could not attack armored cars. We have trained our cavalry to disperse swiftly if surprised by armored cars so as to leave the enemy no good targets to shoot at, and so as to lead the armored cars or tanks into rough country. In the first place, there was no excuse for being surprised. Covering detachments and combat patrols, or march outposts if halted, should always prevent surprise; but this Italian cavalry actually moved to the attack. Perhaps it was native cavalry.

Our cavalry has been trained, and we hope it still retains the principles of that training, to use antitank guns against hostile armored cars or tanks while the rifle units withdraw or disperse to convenient locations. Even the antitank guns, while unlimbering for action, seek cover or ground over which it would be difficult for the cars to reach them. If there is no such ground, the antitank units deploy and fight it out. But if their covering detachment and patrols ascertain that the enemy is in too great force, the antitank units disperse to the right and left along with the rifle units and do not engage the enemy unless they find suitable ground. This is very simple and very easy if the cavalry unit is trained.

Against a force of our cavalry of the same size as that reported in this despatch, the British armored cars would have been destroyed. But we could not make this boast if we do not keep our cavalry units well trained in these practical exercises. The leaders of our cavalry should avoid formal field orders and the repetition of abstract platitudes, and devote themselves to thought on purely practical and concerete exercises for their troops. Cavalry divisions must learn to disperse and yet remain under control. No matter how little cavalry is available in any field operation of a mixed force, it must be kept in hand and not spread all over the country beyond the control of the leader. Its missions must be assigned according to its strength and in accordance with its mobility, and not in accordance with a desire to cover a front that is too wide for it, or to engage in an operation that is entirely too big for its effective success.

Finally, if the usefulness of cavalry is not stressed and explained to those who do not understand it, there is great danger that those who wish to abolish cavalry will succeed. They do not understand cavalry, so they are hostile toward it. They think cavalry officers are not progressive because these officers wish to preserve their arm. Congress is unduly influenced against horses by people who dislike horses. They point out that the German army is greatly mechanized, but they fail to point out that *eighty per cent of the German army is not mechanized.* They fail to point out that the German army has great numbers of horses. They run like a flock of sheep toward mechanization without pausing to consider the whole story of German success. Some level headed intelligence is necessary to check the mad rush to extremes. Some courageous action is necessary in the War Department to stop hysterical propaganda and to keep ignorance from destroying the efficiency of the army.

☆ ☆ ☆ ☆

"War is above all a practical art. Want of foresight, inadequate preparation, contempt of the enemy and ignorance of his strength, violation of great principles, indifferent training, lack of common sense. All these presage disaster in war. And common sense, to be a really useful guide to the judgment, must be *trained* common sense, fortified by *knowledge* and increased by *practice*."

Plan for Survey of Potential Horse Cavalry Reserves

By WILLIAM MURRAY BLACK*

During the past twenty years there has grown up in this country a tremendous interest in hunting, hunt races, and horse shows. In 1922 there were 46 organized hunts listed in this country, while today there are 122. The National Horse Show Association shows a similar growth. It is to these organizations that we must look for our cavalry horses and not to the farmer. All of this is known to those in authority but the writer is outlining the following plan to expedite reaching these sources and to ensure a maximum coverage of available stock, both of horses and of those men who handle and ride horses in civilian life.

Our Army organization comprises, the Regular Army, National Guard, and Organized Reserve. The National Guard asks of its personnel a great sacrifice of spare time left from their civilian occupations and to a lesser degree this is also true of the Reserve Corps. Most National Guard and Reserve Units are recruited from the cities. Most civilians who understand care and management of horses are country dwellers. This group as a whole is not reached by either Reserve or National Guard units and under existing law no provision can be made for any other tentative supply of qualified man power in peacetime.

NOTE: The Reserve Regiments in the Army have no enlisted personnel and are therefore not regiments in time of peace. Therefore, it is proposed, in order to expedite the training of cavalry units, that these men who are qualified as horsemen but who have not sufficient military training to be in the Reserve Corps be reached through their own civilian organizations, that with the coöperation of Hunt Clubs, Horse Show Associations, Hunt Race Committees, regular track authorities, trainers, breeders, and others, a survey be made, first, to ascertain the total available strength of horsemen, horses and motor horse vans there are throughout the country; and then, that the number of horsemen, horses and vans that could be pledged and formed into a Secondary Reserve be ascertained. It is suggested that this latter step be carried out as follows:

First—that men of military age who have the proper qualifications of a horseman be asked to submit to a physical examination and if acceptable to voluntarily sign a pledge for one year's duration that in case of a National Emergency that they would, when called, report within 48 hours for duty with the National Army. This would make available at once for training purposes a group of men both professional and amateur who know how to ride and care for horses. These men could either be assigned to existing Reserve units or to new Secondary Reserve units. Months of training would be saved.

The Marine Corps has a reserve somewhat along these lines. They are organized into regiments composed of both officers and enlisted men, are equipped by the Marine Corps, drill once a week and have two weeks camp as a regiment each year. Unlike the National Guard, however, drill is not compulsory and a man may be discharged whenever he pleases.

Secondly—this same principle would be followed out in regard to obtaining horses. Through these same civilian sources owners could easily be approached and a survey of their stock be made showing the number of brood mares, young stock and available stock. They could then be asked to sign a pledge for one year's duration signifying their willingness to sell to the government at a specified price designated horses passed by a veterinary and tentatively approved for purchase. These horses would be subject to call like the men.

Thirdly—A similar survey would be taken of motor transportation available showing the size and make of horse vans. These could also be pledged for call at specified sales prices. This plan, if put in operation, would in peacetime provide a list of men, horses, and motor transportation available, weeks of valuable time in finding and training would be saved and the cost of such an operation would be negligible. These units would be composed of selected horses and men, who, with proper military training and discipline, would form a cavalry capable of riding across country and in conjunction with motorized and mechanized forces they would constitute a cavalry force whose ability would be surpassed by no nation and would in a modern way carry on the splendid traditions of the horsemen and horses in past wars.

* * *

As an experiment, 350 copies of the following form were mailed on July 3, 1940. On July 15, 1940, 65 replies had been received with the indicated results:

"Realizing the tremendous importance placed on the use of mounted troops and animal-drawn transport in the present war in Europe, and being thoroughly convinced that these activities are a vital part of any intelligent program of preparedness in this country, a number of citizens of Fauquier County have volunteered to assist in the compilation of an estimate in this county of:

"1. Animals owned by you or on your farm which might be available for military duty.
  "(a) Cavalry mounts. (82)
  "(b) Light draft animals (horses and mules). (106 horses and 2 mules)
"2. Employees or men living on your farm of military

---

*Warrenton, Virginia.

age—namely, 18 to 35 years, who have knowledge of horses and horsemanship. (62)

"3. Horse transport, vans or staked bodied trucks. State size. (15 vans and trucks)

"Your reply to these questions is necessarily voluntary but the committee would appreciate your complete co-operation. The information submitted by you will be considered strictly confidential with the exception that it will be tabulated and submitted to the War Department in Washington.

"George W. Cutting, *Chairman,*
"*Committee on Military Animal*
Census, Fauquier County.

"Note: The first tabulation is being confined to the landowners in the Warrenton Hunt Country. Please give information requested in the above spaces."

☆ ☆ ☆ ☆

Pen vs Sword

OVER THERE:[1] It would seem that "The Pen is mightier than the Sword." On August 1st, Nazi planes, flying over England and Wales dropped so many leaflets that some parts of the countryside were as littered with paper as an American city park on a mid-summer Monday morning. The leaflets contained generous excerpts from Herr Hitler's recent speech, in which he offered the British their choice of "Honorable peace" or annihilation.

Thus, the Germans are now employing against Britain the very tactics that the British empolyed against Germany during the most of the "sit-down" phase of the war. It was a long time before the British government could be persuaded that these leaflet bombardments were both futile and wasteful, but persuaded it ultimately seems to have been.

There is of course one interesting difference between the German and British method of assault by the printed word. The Royal Air Force dropped tons and tons of propaganda into Germany before releasing so much as a single bomb. The Nazi leaflets appeared in England as a kind of postscript to a series of intensive and destructive bombing raids.

Offhand this last seems the less intelligent sequence, and, therefore, scarcely the work of the wily Dr. Goebbels. The procedure also seems at variance with widely prevalent conceptions of British psychology. It is generally supposed that a people so hard to convince of the necessity of making war will be even harder to convince of the necessity of making an unsatisfactory peace.

Possibly, then, the leaflet storm represents nothing more Machiavellian than author's vanity on the part of Herr Hitler. Perhaps he has really persuaded himself that the British people were prevented by their government from listening to his speech and that only garbled versions were given to them by the B.B.C. and their press.

Another possibility, and one worth pondering, is whether the efficacy of these propaganda bombardments, both German and English, has not been considerably underestimated. Though the Nazis have waited until now to employ them against the British, they did use them extensively and constantly in France. Little was heard in this country about the numberless Nazi leaflets strewn across the Maginot Line, but there is now some reason to believe they were not an utter waste of paper and ink.

* * *

OVER HERE:[2] It would seem that the sword is mightier than the pen. A fortnight ago, to the American Car & Foundry Co., at Berwick, Penna., went the Army's biggest tank order in its peacetime history—627 caterpillared twelve-ton rolling fortresses to cost around $11,500,000 (about $18,000 apiece). The cheering thing to army men about the order was the certainty of comparatively fast delivery. For under a previous educational order (for 329 tanks at about $6,000,000) A.C.F's, Berwick plant was already turning out twelve tonners at the rate of two per day; expected by September to have upped the rate to five a day.

An old timer in the tank business, but not on a big production scale A.C.F., turned out its first twelve-ton machine on May 8th—a snub-snouted monster armed with four .30-caliber machine guns, a .50-caliber machine gun for use against aircraft and a wicked looking anti-tank 37-mm. (about 1½ inch) cannon. Since then the assembly line has turned them out with increasing regularity. A.C.F., drivers take the tanks for 40 m.p.h., trial runs, see that their Continental airplane-type engines function, bring them back to the shop for final adjustment down to close tolerances (1/10,000 of an inch) before marking them ready for delivery.

To the officers of the new Armored Corps, anxious to start training their men in new equipment, and new *Panzer (Armored Cavalry) tactics,* A.C.F's., tank-production line was just what the doctor ordered. . . .

---

[1] From the *Washington Post,* August 3d.

[2] From *Time Magazine,* August 5th.

Reserve Officers: How Many Are Ready for M-Day?

By LIEUTENANT LAWRENCE M. RICH, Cavalry Reserve

In recent months there has been considerable discussion pertaining to Our Reserves. An article by Major M C. Shea, F.A., in The CAVALRY JOURNAL, March-April, 1940 issue, deals with this subject and was read by the writer with considerable interest. It is not the purpose of this article to criticize the component to which the writer belongs but to discuss frankly the problems which confront the War Department and the Reserve Officers themselves.

Let us begin with training. The War Department has available unit instructors to conduct conferences and assist with extension courses during inactive seasons. Some Reserve Officers take advantage of this training and some do not. There may be many reasons why some do not avail themselves of this training.

Major M. C. Shea in his article referred to earlier, stated that, "The successful man in civil life is very apt to be your best Reserve Officer." This is certainly true and in most cases, a successful man in civil life has an executive position which usually requires considerable traveling and he finds it difficult to attend conferences as well as find the time for extension courses. However, he may be an outstanding Reserve Officer with a great amount of military interest and ability and would be a valuable asset to the service after M-Day. Many of these Officers are willing to give up their annual vacations for active duty but find it difficult to meet the requirements which the War Department prescribes to make them eligible for active duty. Then there are those who attend conferences regularly, do a considerable amount on extension courses and apply for active duty regularly but still do not have the qualifications which make them the desired Officer for M-Day duties.

The average fourteen-day active duty period is group training. It may consist of lectures, observation of regular Army demonstrations, range firing, etc. All this type of training is beneficial but does it qualify an Officer for the duties of his grade on M-Day? Experience of command and handling men in the field as well as in garrison are most essential and how is a Reserve Officer going to obtain this experience when his active duty periods do not provide the opportunity? The Reserve Officer who is already an executive in civil life, usually has had experience in handling men, funds, property and administration; but those that are not in executive positions, lack this experience. A wise educator said, "Tell a man how to do a thing and he will not know how to do it. Show him how by doing it before his eyes and he still will not know how to do it. The only way for him really to learn is by doing it himself." This is certainly true as applied to Reserve Officers because how can any one learn to handle men (and for my own Branch), horses, as well as mess problems, inspections of arms and administration unless the person has had an opportunity to do it actually instead of by observation or by extension courses.

The proposed remuneration for keeping up with the extension courses does not solve the problem in the writer's opinion. In the first place, no member of the Officers' Reserve Corps should ever expect to accept his commission with the slightest anticipation of mercenary desires but only for the desire to serve his country and for the love of the Army. A Reserve Officer is not a professional officer whereby his livelihood depends upon his military duties and many Officers should be willing to accept active duty at their own expense in order to obtain the opportunity to learn by actually doing rather than by observation. The valuable Reserve Officer on M-Day will not be the one who has had to be paid for his interest but the one that has made the sacrifice of his time and money cheerfully.

The solution to the promotion problem is still to be found. Again, the busy executive may be well qualified for promotion but cannot find the time to complete extension courses and yet has demonstrated his ability by considerable active duty and there are many who have completed considerable extension courses but lack actual experience. Which of the two is the one which will be the most valuable on M-Day? And after all, the reason for the Officers' Reserve Corps is for that day.

Finally comes the subject of "Leadership." The best essentials of leadership, the writer read, were published in January-February, 1940 issue of The CAVALRY JOURNAL by Major General H. J. Brees and can be easily applied to the Reserve Officer: 1—Force of character: Some have it naturally; in others it has to be developed and this shows when on active duty in the field. 2—Physical fitness: There is no better opportunity to show this than active duty. 3—Knowledge of one's profession, of men, and of self. Active duty with troops is the proving ground of this important factor. 4—Courage, both physical and moral. Active duty will prove this. 5—Common sense and judgment: Handling troops independently is the place where this is proven. 6—Tenacity of purpose: Active duty will show any weakness. 7—Executive ability: Only by experience and training can this be learned, in civil life or in the Army. 8—Last but not least, that intangible something known as Personality: This is a gift.

To sum up the essentials of Leadership, all but the last are developed by the best instructor—"Actual Experience," and to command the respect of subordinates one must have all the essentials of leadership, General Brees has enumerated. There is no better place to find out one's deficiencies than by active duty with troops and no better way to learn how to be a leader than by actually being a leader.

To the Reserve Officer the Army is a game which must be played and he must play the game as a professional if he is to be one that will be of value on M-Day. Where is there a better demonstration of how well he plays the game than active duty with troops? Where is there a better way to find out how many Reserve Officers are ready for M-Day?

What Would You Do?

"This is the worst country I have ever been in, Spavin," said Major Jeeman, the S-2. "What with hills, rocks, woods and road ditches it is bad enough, but there is at least three tons of barbed wire fence per mile to boot."

"Don't talk to me about terrain, Jeeman," replied trusty Jack Spavin, S-3 and Colonel Rivers' right-hand man. "What bothers me is having Old Man Rivers' stomach ulcers pop out on him at the last minute and having division send down a replacement instead of using our own Exec. Confidentially, in spite of having known him only two hours, doesn't the new leading man seem a bit on the heavy thinking side?"

"It was that shell hitting the old man's last case of tequila that really did the business," began the S-2 when he was interrupted by a Voice from the shade of a convenient tree.

"I have finished my estimate of the situation, gentlemen," said the Voice, "and if you will come here I shall issue my field order."

The regimental staff clustered around the Voice with expressions of awe, incredulity, surprise and disgust.

"Gentlemen, the enemy is reliably reported to be consolidating positions about three miles to the northeast of this point," the Voice began sonorously. "A force of enemy cavalry estimated as a reinforced troop is moving southwest near Hill 783. The 1st Brigade is—"

"Colonel, I've told all that to the staff and the squadron commanders already," said Major Jeeman.

"Kindly do not interrupt, Jeeman," said the Voice. "I am issuing a field order."

The Voice cleared its throat.

"The 1st Brigade is making the secondary attack from Joburg to the west. Our brigade makes the main attack from Hill 783 to the north."

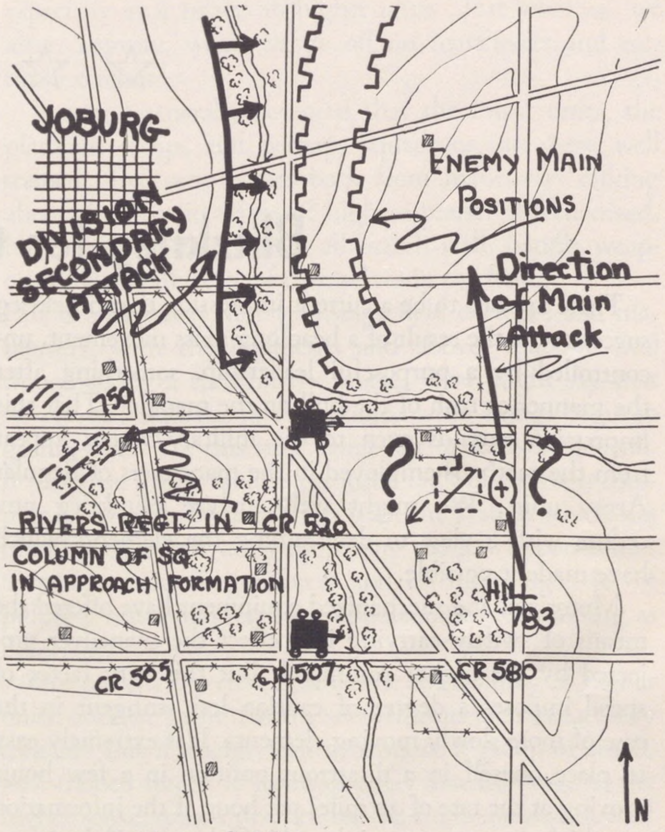
Major Jack Spavin, becoming increasingly agitated, could no longer restrain himself. "Colonel, the brigade commander has already told us that," he cried, "and he has moved out south of CR 505 with the other regiment. He'll be pretty mad if we don't hurry. And besides, our scout cars are awaiting orders along the next road to the west. They may get into trouble with that troop."

"Do *not* speak out of turn, Spavin," said the Voice. "I shall not tolerate further interruptions. Now pay close attention to paragraph two. Our regiment has been directed to assemble in the woods just west of Hill 783, prepared to participate in the main attack of the division. We will make an approach march in column of squadrons, under regimental control, using a covering detachment of one platoon from Troop A. Order of march . . ."

"Excuse me, sir," said a white-faced Spavin, "have you considered the terrain, the . . ."

"Enough of this, Major," interjected an increasingly exasperated Voice. "I have read dozens of times in The Cavalry Journal how this outfit of Rivers' goes all over hell behind a covering detachment. And now you have some objection. Suppose," said the Voice, cuttingly, "that I ask you, Spavin . . .

WHAT WOULD YOU DO?"



Solution

In most types of terrain it is a physical impossibility to adopt a regimental formation, under central control, and to conduct an approach march. The force is too large to handle. In this situation it is plain that the brigade commander of the main attack force has assigned march objectives to his regiments and has planned on regaining control of the brigade near Hill 783 to initiate the attack.

In close country such as that described, the same procedure must be followed by smaller units. Certainly, the regiment must assign march objectives to each of its squadrons and it is possible that the march of each squadron might have to be decentralized to troops. When the regiment is subdivided into advancing groups, each group of course employs a covering detachment to protect its advance. Supporting weapons, such as heavy machine guns and special weapons should be attached to the groups prior to initiating the regimental advance.

In making any advance, control is facilitated by adopting a column formation. In this situation it might be advisable to advance the regiment in column of squadrons, each in approach formation, or perhaps a column of troops could be employed. However, in event of meeting a mobile flank threat, it is useless to expect rear units to await orders from the head of the formation. Such a mobile threat exists in this situation.

In this case a satisfactory method of advance would be to assign the route: CRs 505, 507 and 580 as an axis of advance and to require the squadrons to advance abreast of this axis. Each squadron should be prepared to support the other in the event of meeting resistance. The bulk of the heavy machine guns should go to the north squadron since the more probable threat exists on the flank.

Each squadron might advance with two troops abreast in approach formation (column of platoons in line of half squad columns) and the third troop in support. A covering detachment would be used with each squadron and the regimental forward echelon should accompany the north squadron.

☆ ☆ ☆ ☆

Blitzkrieg for the Foot Soldier*

There appears to be a current impression that blitzkrieg successes are the result of a headlong mass movement, uncontrolled by a purposeful leadership, something after the manner of rush of the bull on the matador. That this impression extends even to the military would appear from the methods employed in the maneuvers of Regular Army units. We might well analyze blitzkrieg procedure with a view to determining the elements which have made it possible.

Motorized and mechanized equipment have offered the means of swiftly carrying into effect the maneuver projected by the higher command. But this very factor of speed imposes a degree of caution less stringent in the case of more slowly moving elements. It is extremely easy to place oneself in a disastrous position in a few hours moving at the rate of 30 miles per hour, if the information on which the movement is based is faulty—or if the movement is entered upon without information.

The fact is that information is the vital factor which enables a leader to exploit the speed of his transportation. If he knows that he has an open gap in his front where no resistance will be encountered, he can send his swift columns to their objective with only limited provision for security. Information is itself the most important element in security since it determines the probable hazard and the extent of the security measures required.

There is speed of information as well as speed of movement, and it is equally essential to the execution of a blitzkrieg. The leader who has information correct as of the moment of his decision has an enormous advantage over one who must base his action on information, say one hour old, or who must delay his action for additional information.

It is well for us to consider the factors upon which speed of information and decision is dependent. They are essential elements of the blitzkrieg of the foot soldier.

First of all, organization and execution of observation so as to reach as far ahead of the troops as possible forms the basis of the foot soldier's research of information. He needs certain technical equipment for this mission. He should have the best of optical instruments to enable him to search as deeply as possible into the terrain of the advance from commanding elevations. He should have efficient individual transportation permitting him to move as rapidly as possible across country and flexible enough for the execution of detailed reconnaissances over the terrain adjacent to the route of advance. Motorcycles armed with machine guns appear to have been extensively used in the present European war. But it is doubtful whether the motorcycle is the best procurable vehicle for this mission. It may be that a tricycle or a light but staunch four-wheeled 2-passenger vehicle—perhaps with amphibian characteristics—would better serve the purpose. Lastly, rapid means of communicating information obtained should be available. The leader who can receive reports valid at the moment of their delivery can act with much more certainty than when reports are delayed. Enemy action may indeed overtake the report. Modern technique makes available light portable wire for local circuits, with an instrument that can be carried in a soldier's pocket. The wire can be recovered as the advance progresses. A battalion commander can receive immediate information from his reconnaissance elements of enemy action in his front, and make his dispositions accordingly.

Victory in war falls to him who can retain the initiative. Action has to be based on information. Who awaits information loses the initiative. There must be far-seeing reconnaissance, trained observation, and immediate transmission. Speed of decision is no less essential to blitzkrieg than speed of movement.

---

*From the current issue of *The Infantry Journal*.

Wishful Thinking

By General Gripe

I

During the past year the army has been subjected to a rash of what are called *Standard Operating Procedures*. Although these things are tactically worthless, they do serve the twin purposes of suggesting what is wrong with our present training system and of suggesting a cure.

The purpose behind the *Standard Operating Procedure* is laudable. The document simply seeks to reduce to a formula certain operations of tactical units which are recurrent. Various formations to suit certain contingencies are listed together with the composition of subordinate groups. There is a place for everything and everybody. The document ostensibly says, "Here is a list of plays we are using this season; we'll call the signals and you do the rest."

Thus the *Standard Operating Procedure* is actually a substitute for the normal functions of the command and staff, and the headquarters personnel.

It seems well enough at first glance. If you want to march in two, three or so many columns you may consult page eight. As a sergeant in the staff platoon of the umpteenth regiment you can find out exactly where you belong by consulting the poop sheets of the division, the brigade and the regiment. All you need is the poop sheets and three-quarters of an hour.

Possibly we exaggerate. But we do not stretch the fact that the average *S.O.P.* is a weighty document and that, even so, it does not begin to cover the subject; there are just naturally too many things to do and too many combinations of things. Of course it is trite to say that troop leading is an art and you cannot standardize an art; still, it's a fact.

The *Standard Operating Procedure* is not the answer to our training problem. Indeed it epitomizes the long-suspected belief that our army might be bogged down with brass hattery, five-paragraph orders and mimeograph machines. It is a confession that our headquarters personnel are incapable of thinking up something to do, telling the troops to do it and seeing to it that it is done, all within the time limits which should be set for mobile troops.

But since we are trying to show that the standard operating procedure fad is only one of many monkey wrenches in our training machinery let's forget about it for the moment and examine the training problem itself, especially as it relates to higher units. Just what are we after, anyway, when we go off on maneuvers and tactical exercises?

It seems generally accepted that the lower units, the platoons, troops and perhaps squadrons, are very well trained. Everyone comes back from maneuvers talking about the men in terms of highest praise. Mechanized, horse or foot soldiers, they all march well, handle weapons well and take care of themselves in the field.

It is only when we try to stage field exercises and maneuvers, with the regiments and above, that we find things taking a turn for the worse. You might say that as soon as a staff has to be reckoned with, things begin to go haywire. Yet this isn't being fair to staffs in general. It really isn't their fault nor is it the fault of the high command. The trouble really lies with the system which has been forced on the army by having too few opportunities to practice with larger forces and by imposing a lot of piddling restrictions on such opportunities for training as do occur.

Our present objective is of course the training of higher units, once we grant that the smaller units are satisfactorily trained. But if a large unit consists of a group of small, well trained forces, it seems obvious that training, in the higher sense, means practice for the high command, staff and headquarters personnel in manipulating the smaller groups around a given bit of real estate.

Pause for a moment and reflect whether it really means the movement of smaller groups over the terrain; maybe we are wrong, and that it means a chance for the command and staff to huddle in a tent and get out a mimeographed field order. However, firm in the belief that the function of the command and staff is to get the troops over the ground, we are going right on from here.

No one can deny that the Command and General Staff School does a fine job of teaching men how to analyze a military situation, appreciate the value of terrain, make reasonably sound decisions, get out a complete order and, in doing so, act either as the commander or as one of his G's. It teaches the relation between the command and staff by showing how the command gets out a directive for a movement and how the staff amplifies this directive into a detailed order. In several places in the book they recommend that the staff supervise the execution of the order. Yes, it's all there. And strangely enough our purpose in putting all this on paper is the hope that it may encourage someone, not to depart from the book, but really to do what the book says.

There is no denying that our higher echelons are as well trained, or more so, in this theoretical hocus-pocus as the platoons and troops are trained in marching and shooting.

But when they leave the map problem room and get out with the soldiers, trouble rears its ugly head.

Perhaps it is because we take ourselves a little too seriously. Perhaps we are too direct in moving the methods of the map problem room onto our horses' backs or into our command cars. Certain it is that in the average maneuver, instead of men manipulating troops, a brain trust appears. The staff seems to think that it must do a lot of high-powered planning in order to avoid having someone give them a "U." Too, the commander doesn't want to infringe upon the prerogatives of the staff. The staff is afraid of the commander. There are conferences. Some lucky outfits actually get a directive. In any event there is a great deal of scurrying around while the staff gets out the order. Charts and maps are set up. When finally the order is out everyone heaves a deep sigh and calls it a day.

Unfortunately, in war or in two-sided maneuvers, some of the troops get to wandering about while all this is going on. The first thing you know one troop has bumped into another, the shooting starts and you have a situation on your hands which does not at all agree with "paragraph one" of the field order which is even now whirling through the mimeograph. Since the other paragraphs are based on paragraph one this naturally makes the salvage officer the only rightful recipient of the order. If it is allowed to get into the hands of the troops it can cause a whole lot of lost motion.

Do you think that the example cited is exceptional or does it happen that way too often?

If it is true that our methods of controlling larger units border upon the ponderous, we say that there are four general reasons:

(1) Our staff work overemphasizes tactics and the planning of operations via the huddle system.

(2) Little or no attention is paid to the supervision of troop movement.

(3) We have developed a false idea of the proper methods of leadership and control due to our stressing of staff planning and radio communication at the expense of direct, personal leadership by a mobile commander.

(4) We confuse tactics with technique of troop leading.

This all boils down to the simple statement that we tend to treat our squadrons and our regiments as though they were Army Corps.

II

It is our contention that where command and staff functions are directed along paths such as these that there is no use whatever in trying to get any training done. You might as well practice football out of the 1908 book of rules.

Is it true that we overemphasize staff-planning and that we take our tactics in the light of strategy?

Is it not overemphasis when a relatively simple one-man job is taken over by four or more assistants, argued over and otherwise unnecessarily delayed? Maybe overemphasis is not the word, but merely a tactful substitution for the real thing.

The regiment, the brigade and the division are small units when war comes over the horizon. In peace they loom large only because of the average officer's inexperience with units of this size in the field. Yet to dispose of any one of them on the ground is not the Napoleonic feat that it might appear to be to a Cub Scout. In fact, any leader who cannot make up his mind quickly as to the details of a particular troop movement while sitting in the saddle, in his command car, or command plane is being considerably overpaid.

In the great majority of cases the regiment and the brigade merely conform to a movement directed by higher authority. For the sake of coördination they are told what to do, when to do it and where to go—at least they should be. The only thing left to be pondered over by the junior is what formation he ought to make the move in. Does this call for a huddle of brass hats and a rattling of operations maps of elephantine size? Are the communication facilities of the unit so poor, or its commander's lethargy so great that the three or four men who command the next subordinate groups cannot be informed of the movement and entrusted to initiate it. Why can't a commander send for Tom, Dick and Harry, or visit them himself? Why not just say, Tom, you take your regiment to A, via B and C. Dick, you go to D via E and Harry, you come with me. After we get there we'll decide what to do next.

There are few movements made by units below the size of Army Corps in which the commander cannot do almost all of the thinking and ordering himself, using his staff to supervise and coördinate the movement. Anyone who thinks this is heresy had better study the Polish campaign and those which have followed. It is not too much to say that the amplification of plans by regimental, brigade and even division staffs, and the issuing of written field orders by anybody is not only unnecessary but downright dangerous.

Probably a great deal of the high-powered planning comes from the naïve belief that the Intelligence Officer is going to come out with a five-star final in which the innermost thoughts of the enemy commander are pitilessly exposed. Why this belief should exist after all the experience of history, backed up by our own maneuvers, goes to prove the inadequacy of G-2 reports is a question. Undoubtedly in the World War of 1918 there was a great deal of time to assemble a multitude of small facts and add them up to a good guess. But no more. The sun, the world and the war do move.

In these times the army, whose spies have informed it of its superiority to its adversary, simply barges ahead on a broad front, lets the situation develop, come what may, and reacts accordingly right on the spot. There simply isn't time for writing it all down. In any event you can't worry too much about the enemy. There are always two or three obvious courses of action. You might just as well match pennies to see which one wins. Why not trust to your ability to *execute* a fairly good plan gotten up quickly by the commander himself, rather than immobilize your troops while your staff is trying to hatch a killer-diller?

We want very much to believe that our organization will permit a commander to have an idea and to communicate it speedily to his subordinates. We want to believe that the staff and the command can get the idea over without resorting to writing notes and pamphlets.

But we are afraid that someone is trying to substitute a *Standard Operating Procedure* in the hope that:

(1) Page 6 will answer the tactical situation.

(2) The staff will be saved a lot of running around on horses, motors, and airplanes.

(3) The personnel of Headquarters Troop can have time to work on the trunkful of estimates, reports and other blank forms gotten out by service schools.

(4) When things go wrong, the high command can merely write the offending party requiring an alibi by indorsement hereon as to why par. 46 *S.O.P.* Xth Cavalry Brigade was not complied with.

III

We have said that the staff supervision of troop movement is generally slighted. This comes about through overemphasis on the staff planning we have just been talking about. The staff does so much planning and order-issuing that they have no time left for anything else. In getting out an order they feel that they have done enough for their country, whether or not the order ever gets to the troops in time to be of any use.

There is something peculiarly American about this attitude. It is like the idea of passing a law, firm in the belief that its presence on the statute books will insure its being faithfully carried out.

The facts are that the need for rapidity in getting out instructions to the troops is matched only by the need for giving careful supervision to the execution of the instructions. Supervision of troop movement is just about 90% of a staff officer's work.

We do not mean nosey interference with subordinates, though in some cases this is inevitable. But if the subordinate gets a lot of dots and dashes off the ether, or even a written field message telling him to go from A to B he must first tie his movement to the ground. Unless he has a splendid map he has a real job on his hands; he should be grateful to anyone who will come along and point out to him the place he is going to and the way to get there. And there are always a hundred and one things a subordinate wants to ask about—where is the artillery support, how soon will it arrive—what is the general plan—how much latitude does he have in carrying out the move—what is to be done in such and such a contingency. Messages are small comfort when things are moving right along.

But a staff officer, tactful enough to remain in the background until needed and thoroughly conversant with the general plan, who personally accompanies the subordinate, could be of real help in answering questions, serving as a guide or acting as a liaison officer. As such he certainly accomplishes more than the man who remains at headquarters sticking pins in a map or getting charcoal on his hands and face.

The English language is subject to so many misinterpretations that the logical assumption of the person issuing an order should be that it will be imperfectly executed. As far as possible, headquarters personnel should be present with lower echelons to help prevent mistakes from occurring. And then there is the possibility, if not the probability, that a tactical move made according to order may have to be modified because of unforeseen circumstances unknown to the higher headquarters. A staff officer present at the time the change is needed simplifies the business of helping the subordinate decide what to do. A return to the higher headquarters by the staff officer sometimes helps to put over an alibi which otherwise would fall on barren ground; sometimes he can help to make additional supporting troops quickly available.

We do not visualize staff officers prowling all over a battlefield. But we are trying to put over the idea that command and staff personnel must be mobile. Instead of spending all their time at headquarters they should be ready and willing to visit all echelons of troops frequently during marches, approaches, attacks, defense and delaying actions.

There is nothing at all unusual about all this. See Command and Staff principles, C&GS School. All successful commanders have done it and required their staffs to do it. The Germans make a fetish out of it. We recently saw a report to the effect that in Poland a division commander made a personal motor trip behind the Polish lines in order to regain control over a regiment that had pushed far ahead of adjacent units. It did not occur to him to write a letter.

IV

When we talk about misconceptions of leadership methods, we mean that all of this fol-de-rol about high-powered staff work has tended to make commanders forget that the way to command troops is to do it themselves. Things have got to the point, in some units, that people send radios over distances that a small boy could cover with a glad cry.

There are three ways of controlling troops. First, you can shout an oral command, give a drill signal, or you can issue an oral order either by visiting subordinates in turn or having them assemble on you. This is direct, personal leadership.

Secondly, there is control through staff and messengers. When we deal with large units, spread out over a large area, the commander cannot be everywhere at once. He has to have help. It is particularly true when enemy fire becomes effective and the commander cannot afford to take the risks that personal mobility at such a time entails.

In controlling through staff and messengers, a commander gives an oral order or written message (or fragmentary order if you like) to a staff officer or enlisted messenger concerning an element of the command. The messenger rides, walks or runs to his destination, where he can usually furnish the recipient with much more information as to the state of affairs than is conveyed by the message itself. He may answer questions, and then finally return to his own commander with a return message plus what amounts to an observer's report as to what is going on down in Casey's regiment.

The third method of control is that of using signal communications to disseminate instructions. Useful over long distances and where enemy fire makes the work of runners extremely dangerous, signal devices also have some very bad characteristics.

One of the worst of these is the lack of personal contact. The recipient of the message must make his own interpretation of the content, sometimes no mean source of disaster. He cannot ask questions or present reasons for doing something else without going through a hopelessly time-consuming process. A message mentioning certain terrain features to small units like the regiment and brigade may not permit of references to a first class map; or it may be difficult to identify terrain features on the ground. Interchange of radio messages between combat units always succeeds in jamming the air, a condition which has led to a great restriction on the use of radio in the German Army.

In spite of these faults, the last few years have witnessed our army making an amazing attempt to substitute radio control for personal, mobile leadership, or for control through staff messengers. The attempt itself has not proved a bad thing because of the fine technical advances which have resulted from it. Yet, the limitations, though apparent, have not yet been pointed out. Moreover, it should have been apparent from the start that no matter how technically perfect, a radio message can never substitute for the personal visit of a commander to a subordinate, where the subordinate's terrain objectives and the routes thereto are pointed out on the ground.

It may be argued that a lot of running around by commanders and staff officers is impossible in the face of enemy fire. This argument will not hold water because the division, the brigade and sometimes the regiment will usually make troop dispositions out of range of aimed fire. All the division can do in an attack, for example, is to prescribe localities from which the main and the secondary attacks are to be launched. After these localities have been pointed out, with routes and coördinating features added, the division must leave the rest up to the brigades, and so on down. All this disposing of troops can be handled, and should be handled, by mobile commands and staffs long before hostile aimed fire is encountered. It is only when the regiment begins to tell the squadrons what to do that the problem of hostile fire becomes acute.

Of course no one is going to claim that being subjected to long range artillery fire or machine gun fire is any fun, yet there is work to be done while it is going on.

It is a safe rule that no radio message (except one confirming other means) should be sent unless it is absolutely impossible to obtained a trusted messenger to carry the information personally, or unless very dangerous conditions prevail.

It is an equally safe rule that no messenger or staff officer should be assigned to a liaison mission when the commander himself is able to make the trip.

These rules are simply tried and trusted control methods employed by ace cavalrymen of the past, as well as being accepted methods now used successfully in Europe.

A division advancing to a combat area should certainly not be spread out over more than five or six miles of front unless its leader proposes to risk defeat in detail; as combat becomes imminent distances and intervals should, if anything, decrease. But even on a front of ten miles, how long does it take the division commander to motor to one brigade and to assign its objective while the G-3 does the same for the other brigade? If the commander stays right with the major element of the command, how long does it take a staff officer to gallop, drive or fly to the other element? Do the time and space factors vary a great deal whether the division is on the march, approaching combat or actually engaged? All this is a mere matter of a few minutes.

Even if radio telephone is available and messages can be sent in the clear by telegraph, it cannot compensate for the advantages to be gained by command and staff personnel going to the lower organizations, seeing their problem on the ground and checking on their correct execution of the movement being carried out. How many tons of grief are saved by this sort of personal mobility, it is impossible to calculate.

V

The question of confusing tactics with the technique of troop leading is an academic one. We define tactics as the art of maneuvering troops in the presence of the enemy. In the map problem room we seek to place our paper strength so that it will strike a defending, paper enemy's weak point; or we defend terrain in such a way that an effective counterattack will turn the tide in our favor.

Having full knowledge of the enemy strength and dispositions, this becomes an engrossing game in which the Reds suffer eventual defeat, or the player gets a "U."

But when the player takes the field with real soldiers, he finds that his airplanes, his scout cars and his patrols do not function up to his expectations. In fact he never hears from a large percentage of them at all until the war is practically over. If it were not for his knowing exactly what forces were pitted against him when the Corps Area got up the maneuver he would be in a pretty bad spot for enemy information. His "paragraph one" is almost non-existent.

It reminds us of a student maneuver we once attended when, after the usual pinwheel staged by two cavalry commands in a meeting engagement, our squadron slithered off into the bosque, where it presently found itself alone. At this point an instructor appeared and said to the squadron commander, "Major, what is your estimate of the situation?"

There being absolutely no information of the enemy whatever it was of course impossible for the major to open his mouth to make an academic reply. But while it seemed funny at the time, we have since seen countless situations in which a similar question would have obtained an equally barren answer.

If you know little or nothing of the enemy your schoolboy's estimate of the solution is pretty rickety. The decision resulting from such an estimate is not so hot. The plan worked out from the decision is a source of worry. And the order produced via the plan is not going to do the troops any good.

However, if you are out there on the ground and the enemy is somewhere to the front, you are going to be required to do something about it.

It boils down to the fact that we had better stop worrying about tactics. You can play with the idea, of course, by reconnoitering and patrolling until you are satisfied in conscience. But don't expect to find out anything and don't be bothered because your estimate of the situation will not suggest a Napoleonic coup. Mobile troops must get used to working in the dark, if necessary using their mobility to run away from a dangerous situation once it develops.

What you are after is the confidence which says, "We don't know where we're going but we're on our way," backed up by the technique of troop leading which will see you through.

So, preceded by reconnaissance, you move out. You can move in one, two, or so many columns. You can divide up your supporting weapons among the columns, or, on a hunch you can put the bulk of the weapons with one column. It doesn't particularly matter. It is a tentative distribution.

After a couple of miles you may actually get some infomation, or you may get another hunch. You may want to shift weapons and troops around among the columns as a result, using cross roads, or cross country.

Shortly after you may decide that you have enough information to work out a plan of attack. Perhaps you are just guessing and decide to attack and see what happens. Perhaps one of your columns will run into the enemy and you will have to help out with the others. In any case, you organize, from the columns, a main attack force, a secondary attack force and a reserve; this probably calls for some more shifting of troops from one group to another.

You can do a lot of this by personal leadership, getting around from one column to another, or your staff can help you by carrying the good news to whatever element you say. You are the one who is making the decisions and giving the orders. There is no huddle because it is too simple.

You pick out a place for the main attack to be launched from, one for the secondary attack, and a spot for the reserve. You point out the objectives to the leaders concerned, on the ground if possible and otherwise on a map. Your staff helps by going to the leaders you yourself can't reach. When you have pointed out the objectives and given the coördinating signal you can relax to the degree that it is up to the subordinate leaders now. They have to get there. You can go with the main force and see that they carry things out according to plan, and then you can send one of the staff with the minor elements. Only one or two staff people are involved, at the most.

Now, all this movement between columns, interchanging troops, and the subsequent organization into attack echelons is a form of drill. It would be the same if you moved forward or backward into a defensive position, only easier, since the enemy might not be so close by. But the whole thing is very little different, in the main, from close and extended order drill performed by troop, squadron or regiment. Given a plain large enough you could drill a division. Where the ground is broken up it is still division drill, except that the formations are decentralized into columns, each drilling on its own ground, yet basing its movements on other columns.

Suppose a division moves in four columns on two terrain objectives. En route there is some interchange of vehicles, machine guns and artillery based on the hunches of the division commander. Ultimately, the division commander sends out an order that two columns will go to the right objective, one to the left and one in reserve. The orders are brought to the heads of columns by staff officers, who supervise the movement into position.

Arriving into position, the division has performed the only part of an offensive movement over which the division headquarters has any degree of control. By varying the composition of the columns and the composition of the forces as finally organized through several such exercises or drills, the division can obtain a flexibility and assurance which no amount of *Standard Operating Procedure* will ever produce.

But if one of these exercises is held and the command is halted while the command and staff analyze enemy information, make an estimate of the situation, formulate a plan and issue a written order (or even a dictated or oral order to assembled officers) the exercise ceases to be a drill and becomes a Tactical Operation, in capital letters. Thus the difference between Tactics and the Technique of Troop Leading becomes largely a question of how much you worry about the enemy.

Patently, the exercise in troop leading should move a lot faster than a Tactical Operation covering the same situation. The German campaigns of 1939-40 may be classified as exercises in troop leading since the enemy figured only incidentally in the movement which went on just about as fast as if no enemy had been present. Of course, swift movement has an element of risk, whereas the only risk involved in a carefully planned Tactical Operation is that of failing to reach your objective on time coupled with the risk of the enemy pouncing upon your troops while they are waiting for you to make up your mind.

All in all, there are grounds for suspicion that a division which made a guess as to the number of columns involved in an advance to an objective, together with a reasonable guess as to the composition of the columns, could, by conducting a division drill, seize its objective with a lot less trouble than that encounterd by a division which stood by while its staff hatched out a perfect plan.

And for the sake of the conservatively minded, a well drilled division could afford to be more cautious than one handled by the huddle system, because once the commander made up his mind that his G-2 had exhausted his means of getting the information, a blitzkrieg could be gotten under way at a moment's notice. With the huddle system any form of mobility is impossible. But with a well-drilled division, practiced in shifting its strength from one column or group to another, a poor initial guess could be quickly retrieved by changing to a more suitable formation after the action developed.

More important, the command and staff would have their attention centered upon the movement and manipulation of troops rather than upon getting out an order which called for the elements to manipulate themselves.

VI

We can sum up our ideas of what staff procedure should be by saying that, initially, at least, the training of the higher echelons should be nothing more than a series of drills on the technique of troop leading. When the unit has finally become flexible and able to shift its strength rapidly in response to simple commands of the leader the staff will have ample time to get out the various staff documents and see to what extent the different estimates, reports and situation maps can be applied without bogging down the operations to an unwarranted degree.

The objectives of the drills should be:

(1) To test the ability of the unit to change its formation from time to time during an advance to a terrain objective.

(2) Prior to arrival at a terrain objective, to test the ability of the unit to organize for offensive action by forming a main attack force, a secondary attack force and a reserve; or organize for defensive action by forming defensive groups, each to occupy different defense lines or areas.

(3) To test the ability of these forces, after organization, to move to indicated terrain objectives, or attack localities.

(4) To test the ability of the organized groups to respond to coördinating measures imposed by the commander of the whole unit, i.e., to advance to a phase line, move on designated routes cross country, attack on signal, etc.

(5) To adopt the foregoing formations, or initiate the movements as a result of orders given by the force commander, without consultation with his staff.

(6) To train the staff personnel, and the enlisted staff assistants to disseminate the commands of the leader without resorting to written orders, messages or signal communications.

* * *

It seems obvious that a unit which has attained these objectives would be very well trained for the type of warfare we have been reading about lately. If it were able to stage these drills frequently enough so that the composition of columns and the organization of attack and defense groups could be varied many times it seems equally obvious that the *Standard Operating Procedure* could be thrown in the waste basket where it belongs.

Unfortunately, the *Standard Operating Procedure* fad, and the staff huddle are not the only items of field training that fall under the heading of obstacles to progress. There are others, some of which we can control and others which are beyond our control. As in the case of the objectionable features we have been talking about, the other obstacles to training have come about as the result of the system which has glorified the map problem; yet they are none the less objectionable.

We can do nothing whatever about enlarging the postage-stamp areas on which we are compelled to train mobile troops, nor can we change the system of maintaining small cavalry garrisons in tiny posts, where troops never see the special weapons and the associated arms with which they will have to work in time of war.

But we can do something to overcome the influence of certain stupid practices and habits which have become a part of our training programs. We can simply change our ideas about these practices, or simply forget them; which are listed in the succeeding paragraphs. In the main they represent attempts to find substitutes for practical field work.

(1) The commanding officers of many units often appoint themselves chief umpires of field exercises and maneuvers, with the result that their own staffs and headquarters personnel are forced to practice with a team on which the star has been replaced by one of the scrubs. You may as well put in a new quarterback at the last minute before a big football game. The man may be an All-American, and the team may have seen him play elsewhere, but no one will deny that it will take most of the first half for everyone to become adjusted.

The commanding officer of a unit has the responsibility of leading that unit; while juniors should get practice in handling forces larger than those warranted by their rank, the fact remains that the opportunities for holding field exercises with units the size of a regiment and larger are not even sufficient to train the officers assigned to permanent command. The advantage in giving the training to junior officers is more than offset by the usual widespread comment that the commander is uncertain of his own ability to lead his unit.

(2) Detailed, written exercises are gotten up by Operations sections for execution by their units in the field. These have all the objections listed for *Standard Operating Procedures* and, in addition, they invariably develop the troubles which one may expect to meet when fooling with over-complicated machinery. Most regimental exercises, for example, prescribe what the regiment is to do in such detail that if one unit fails to conform to the exact terrain limits imposed, the entire exercise collapses. It is a cardinal principle of control that we cannot exactly prescribe the movements of any unit larger than a platoon; then why try it with a regiment or a division?

Worse yet, when the movements of subordinate units are set down through a series of phases, the headquarters personnel habitually adopts the attitude that there is nothing more to be done. It is like a staff which knocks off work when the stencil-mimeograph of the order is signed. There is a huddle of master-planners, but no one ever gets out and gives the orders designed to keep things moving.

(3) In too many tactical exercises or maneuvers, the approach phase of combat is ignored. An attack for example, consists in placing troops in position and launching them at an objective. Yet the time during which a regimental or higher headquarters is most concerned with troop dispositions is the time which precedes the occupation of assembly positions from which the attack is to be launched; or in the case of defense, the occupation of the assigned defensive sectors. In point of fact, since the approach is theoretically made while the command is beyond aimed, hostile fire, it is one of the few exercises which can be practiced in peacetime exactly as it might be carried out in time of war. The problem of the division command and staff is to place the brigades in positions from which to attack, to furnish adequate fire support from division weapons and to arrange for the coördination of effort. Similarly, the regimental commander is mainly concerned with placing his squadrons in attack or defense positions, attaching the regimental weapons and coördinating the action.

The majority of division, brigade and regimental field exercises should begin with a route march, progress through the approach, and terminate with the command organized into echelons, such as main attack, secondary attack and reserve groups, each ordered to coördinate its action with one or more other groups. Beyond this stage the headquarters has no function, until a new situation has developed, based upon the reaction of the enemy to the initial blow.

(4) The need for hasty action is not appreciated. Most of our tactical instruction takes it for granted that reconnaissance vehicles and patrols will function well enough to prevent surprise meeting engagements while the command is maneuvering. This belief proves embarrassing during maneuvers and may prove disastrous in war. Horse and mechanized cavalry are susceptible to surprise because of their mobility, especially during the approach phase of action. Trained to launch an attack quickly in any direction at an adversary suddenly encountered, there is nothing to fear; or the same type of training may serve to extricate a command from a difficult situation before serious losses occur. But a sticky unit, unable to withdraw or employ immediate shock action will issue a five-paragraph order and be destroyed.

(5) This recalls that most of our exercises assume that the "enemy" is fixed in position. It requires only a demonstration or two on maneuvers to show what happens when the enemy is mobile, even to the degree of mobility possessed by foot troops. The surprise engagements mentioned above become commonplace, units are frequently caught in flank and are saved only because the enemy fires blanks.

It might be advantageous to scrap our ideas regarding the "enemy" in field exercises by training troops only in the seizure of terrain objectives and in reacting immediately to surprise meeting engagements. As now conducted, warfare seems more a question of the capture of key terrain points by the penetration of enemy weakness than of battering strong positions by frontal, or partial flank attacks. Yet such tactics have ever been the forte of cavalry.

Our exercises should involve the selection of a terrain objective, and the training of the command in the movement thereto by applying the principles of troop leading already described. Let us remember that in the advance on a broad front the columns meeting strong resistance will be assisted by flanking action from troops penetrating weaker points along the front. Yet all will have initially moved on terrain objectives.

(6) We have an unfortunate vice of trying to acquaint all officers (and sometimes all noncoms) with the details of a tactical exercise before it is begun. The idea seems to be that in order to maintain interest it is necessary to let the hoi-polloi know what is going on. Since such a course is impossible in war, it is difficult to see just what purpose is served in time of peace, especially since the system never works out well. The desire to let one and all in on the secret of what the regiment is going to do is probably responsible for the rise and growth of the detailed, written exercise; possibly there is also an idea of making the thing a matter of record for the sake of the files at higher headquarters.

There is only one thing that any officer from the grade of lieutenant to that of brigadier general really wants to know in a war and that is his objective. He will generally be able to surmise that he ought to attack or defend and that he ought to do it as quickly as possible unless otherwise ordered. And if someone will just tell him where to do it he can probably figure out a way to get it done.

But field exercises, especially those dealing with large units, must progress for some time before the captains are given an objective, and in the meantime they would just as soon be let alone. The experience of the past has gone to show that where attempts have been made to tell them all about it, beforehand, the idea has gone through several complete changes by the time they are called upon to do their part. Why not let them wait and have only one set of orders issued?

It is quite probable that by going ahead and having an exercise in which the various subordinates merely conform to the various formations and movements prescribed by their immediate superiors, a great deal of lost motion will have been saved. And by having a thorough critique at the end, much more material of value will have been brought to light. The tactical lessons will be far more pointed by reason of hindsight than by foresight. And if it is desired to make the exercise a matter of record the Operations section can write it up afterward.

(7) Most of our field exercises, as distinguished from maneuvers which are supposed to be continuous, attempt to do too much at once. We have said that the training of the regimental and higher headquarters is concerned only with the placing of the next subordinate units in position from which they can attack or defend, and with organizing them with the proper amount of supporting weapons and coördinating measures. It is at this point that the regimental and brigade exercises should end. If it is desired to carry an attack through to its final phases, it will take much more time for its proper execution than is normally available in a one-day's drill period. A regiment, for example, can work out two problems an hour in which only the approach and the organization of the command is considered. But if it is necessary for the squadrons to launch the attack, it would be better for the squadrons to return another day, occupy the same positions and launch the attack against minor objectives which have been properly pointed out to troop and platoon leaders.

It is a great waste of training time assigned to the regimental echelon to work on problems which are properly the concern of the squadron or troop commanders.

(8) The command post exercise, as usually run, is one of the worst possible preparations for field work. Where a series of command posts are set up in tents or in office buildings, and where these are told off to send notes to one another, we have one of the prime examples of fighting the last war. We have said so much already about the business of conducting mobile operations by means of the written word that it scarcely seems necessary to go on. The ordinary command post exercise is not only worthless, it is a breeding place of the vice of tactical immobility in the field.

It is possible to have a command post exercise in which students are taken into the field, given all the staff, messenger and headquarters called for in the tables of organization of the unit with which they are concerned, and then are required to work out a moving situation in which combat platoons and squads are represented by flags. We have no room here to describe such an exercise in detail except to say that it naturally takes up just as much training ground as a field exercise with all troops present.

Any further attempts to substitute command post exercises for field work by setting up installations in buildings and tents should be at once abandoned.

VII

In maneuvers we make most of the mistakes we have listed as occurring during garrison training. In addition, we have an unfortunate habit of cutting the maneuver short just at the time when the troops and the staffs are getting used to working together. It is particularly bad in the case of division maneuvers, when the division, brigade and artillery staffs need at least a month of daily maneuvering to get used to each other and to the system. As things stand now, units often break up with mutual recriminations and misunderstandings, all of which would be straightened out if another week's work were available.

A better design for maneuvers is a situation which pits a small, highly mobile force against a large, less mobile force, where the smaller force has the mission of delaying the larger. This permits the maximum degree of freedom to rival commanders, since the tempo of the maneuver is geared to the movements of the less mobile group without any restrictive rules whatever. The smaller force is permitted to exercise its maximum mobility in order to strike the large force in a vulnerable spot, it can delay in successive positions or it can combine the two methods. The large force must work both on attack and on defense, attacking the enemy delaying forces in position and defending itself against attacks in flank and rear. Thus we have a maneuver in which complete freedom can be given to the senior commander of each side and which provides a wide range of opportunity for all types of action.

The lessons of maneuvers are frequently lost through the habit of calling administrative halts from time to time. These halts may be for the purpose of regaining control over the maneuver, eating meals, or for various other purposes. While normally, during these halts, troops are supposed to remain in position, actually the halt permits disorganized units to regain control at least to the degree of contacting all leaders. False ideas of the efficacy of types of organization result, especially as they pertain to the employment of supporting weapons. The frequent halts serve the same purpose as a movement by bounds, since, at each halt, ideas and orders for the use of the weapons during the next active period can be formulated. The unreality of this is obvious.

There is no reason why most of these faults in the conduct of field exercises and maneuvers cannot be eliminated. It is largely a matter of adjusting one's mental attitude to the actual conduct of troops in the field instead of concentrating upon the solution of a tactical problem. Most of our ponderosity has arisen from the attempt to reproduce the methods of the map problem room out on the ground, and since the methods of the map problem room are to a great extent predicated upon World War command and staff procedure we are twenty years behind the times.

We need a return to the principles of controlling troops practiced during the Civil War by men of the Jeb Stuart and Nathan Forrest stripe. It does not seem to be realized that while the German Army has scored great successes with modern equipment, their ideas of coördinating the use of this equipment are what have made the campaigns of 1939-40 unique; these methods of control are characterized by mobile commanders exercising direct control who employ mobile staff officers to assist them. Their excellence is merely the inevitable result of repeated practice in the technique of troop leading.

VIII

So far we have indulged in a considerable amount of destructive criticism and what we have had to offer in the way of advice and suggestions has been largely put in the abstract. So it seems only fair that we should close this discussion with a concrete example of how we think a tactical exercise should be planned and conducted.

We intend to show the movements of a horse cavalry regiment in attack, the type of troops and the form of the exercise being chosen for special reasons. In the first place we want to illustrate the actions of mobile troops, therefore the reference to cavalry; more officers understand the organization and conduct of horse units than are familiar with mechanization, therefore the accent on horse; finally, the attack exercise has been selected because in general the operations which lead up to an attack require more mobility and more attention to the technique of troop leading than operations of other types.

However, exercises in troop leading are capable of being applied to a wide variety of troops, without having the general principles modified to any great extent. All types of combat troops figure on attacking with an assault echelon which may be divided into a main and a secondary effort. In nearly all units a portion of the command, with or without special weapons is charged with the furnishing of fire support to the assault echelon. And some part of any attacking force must be held out initially as a reserve to guard against unforeseen circumstances, or to exploit a success. So we believe that with certain obvious modifications, what we have to say about a typical attack exercise for horse cavalry can be fitted to the requirements of mechanized, motorized or foot troops.

It seems logical to deal with a regiment. It is really the first headquarters, that is, the smallest headquarters, in which we find a staff and staff assistants. It is all very well to talk about major generals, as they do on graduation day at Leavenworth, but what this army is in need of is a flock of good majors. So, for the sake of simplicity, let us talk about a regiment, since what the regimental staff and headquarters do is very little different than what a brigade or division staff works at.

* * *

Before we start on our training program we must insist that our colonel take the proper attitude. This means that we want him to keep the whole thing to himself and not to publish any poop sheets in advance. No "situation" can be permitted to develop, except as imagined by the colonel from time to time during the exercise. Our object is drill—drill in manipulating squadrons, troops and support weapons.

If our regiment has not had several practice sessions at close and extended order regimental drill, a few hours should be devoted to such parade ground work. The purpose of this is to provide a degree of familiarity on the part of the troops with the command methods of the colonel and to accustom themselves to movements and formations made in conformity with adjacent, or "base" units; also, since drill commands or signals cannot usually be given directly to so large a unit, the staff and its assistants obtain practice in relaying the colonel's commands to the subordinate leaders and in supervising their movement into the new regimental formation. A wide variety of formations and movements should be practiced, line, column and echelon of squadrons; at the same time the distribution of machine guns and special weapons in various proportions while on the move should be given careful attention.

Having readied his regiment for field work by this close and extended order drill the colonel should prepare his field exercises. This he does by first making a reconnaissance of the available ground. From now on we may relent a bit and permit the S-3 to accompany the colonel and assist him so that, after becoming adjusted to the colonel's personality, S-3 may one time plan the exercises himself, for execution by the colonel.

Available ground may well prove a poser. While the posts of the southwest afford plenty of open spaces for drills of any sized commands, other parts of the country provide little more than a parade ground surrounded by buildings. But in spite of the most adverse circumstances, sufficient room can usually be found for what we are about to propose, even if we wind up by attacking the Quartermaster's office.

The object of the reconnaissance is to find a covered position from which a main attack force might be launched against an objective (O). This covered position must be on terrain under military control, since troops are to actually occupy the position. However, the objective, O, need not be on such ground because it is not intended to require the troops to move beyond the covered position, which we shall now call "M," for convenience.

We need, at the same time, another covered position, "S," from which a secondary attack force might be launched against O. S should be some 400-800 yards from M, in order to meet the requirements of having each attacking force within supporting distance of the other.

The ground within a semicircle of one mile radius from M and S, and on the opposite side from O, should be if possible maneuverable for mounted or vehicular units.

Having selected these points on his reconnaissance, the colonel must now figure out a way of putting his normal reconnaissance agencies to work, in this case his scout cars and patrols. For the sake of training these units in the relaying of information to his regiment while on the move the colonel may plan to station flag bearers at different points in the vicinity of S, M and O (if the latter is on land under military control). The reconnaissance agencies should be instructed, on sighting these flag bearers to move to them at once and to relay to the regimental headquarters the contents of a message which the flag bearer will hand them.

Some flag bearers should hold instructions for crews of vehicles, and for patrols, to dismount and to conduct a dismounted reconnaissance towards another nearby flag bearer who will give them the necessary information to send back.

However, it does not matter in the least what this information is. The contents of the messages can be on any subject from agriculture to politics since the messages are intended only for the colonel who is drilling his regiment according to the developments of a situation which he is thinking up as he goes along. But some kind of training has to be given to scout cars and patrols who, after all, are part of the formation of the regiment as it advances to the attack and who must learn to work with it.

Having planned for the flag bearers and their positions, the colonel tells his S-3 to have the men in their places on the day set for the exercise.

The next step is to arrange a date with the regiment itself which the colonel can easily do by telling the adjutant or the S-3 to see to it that the troops are assembled at the flagpole at the proper time.

At the flagpole the colonel asks the S-3 if the flag bearers have been posted and upon receiving reassurances on this score the colonel marches the regiment, scout cars and all, to a point about four miles from O, so chosen that the points M and S are between O and the regiment.

The next step involves the issue of an order. The colonel assembles the staff, the squadron commanders, the scout car and the machine gun leaders and speaks somewhat as follows:

AN INFERIOR ENEMY IS ABOUT FOUR MILES TO OUR NORTH NEAR O. WE ADVANCE TO THE ATTACK AT ONCE.

He instructs what vehicular reconnaissance he has to report to S-2 at once. He tells S-2 to arrange for a detailed reconnaissance of the vicinity of O at once, and S-2 works out with the scout car leader the necessary zones and routes of advance for the cars. One or two mounted patrols may also be sent out.

In the order mentioned above the colonel should also prescribe the formation to be adopted for the advance. This will depend on the character of the terrain, whether it is open enough to permit movement in an approach formation, or whether it is so rough, or fenced to the degree that a movement on roads is necessary. In any event a movement in two columns or more should always be undertaken since a one-column movement gives little or no practice to the staff and their assistants.

Interval between columns should not exceed one-mile because of the requirements that columns shall remain within mutual supporting distance. If a greater interval is imposed by the character of the terrain at the beginning of the movement, it is essential that the shorter interval exist at the time the columns arrive in the vicinity of M and S.

The composition of the columns is tentative only and may consist of any arrangement the colonel may see fit to make. A suggested division is a two-column movement of one squadron per column, with special weapons evenly split and with a machine gun platoon attached to one column while the remainder of the troop moves with the other.

The colonel assigns each column a terrain objective on which to move, and, if possible prescribes the route over which the columns are to move. One column is designated as the base column and the other directed to maintain contact with it by means of a connecting group. This group may operate cross country or by using cross roads. Where movement cross country is impracticable motor vehicles should be used to maintain contact between columns.

For the sake of practice, the columns should be directed to advance only to an intermediate objective such as a particular cross road or other terrain feature, on arrival at which the staff can move between columns and regain control while the next objective is assigned.

We want to emphasize that all these details are ordered by the colonel without consultation with anybody. He can order his staff to assist him, as where he orders S-2 to arrange for the reconnaissance of the vicinity of O, but he should err on the side of too much detail, if at all. He is giving these orders as a result of his own conception of the "situation" which he has confided to no one.

Having given each column an objective, a route and an intermediate objective there is nothing left but to say, "forward, march." When this command is given the colonel, with his command group and the command post group join one of the columns.

Unless a movement on roads is made necessary by the terrain the columns should move out in approach formation, each with a covering detachment, and each under control of the pertinent squadron commander. When moving on roads a small advance guard should be employed instead of a covering detachment.

On reaching the first intermediate objective, or the first "bound," the colonel should issue orders for movement to the next intermediate objective by sending his staff officers to one column while he gives orders to the other himself.

In the initial stages of the move the composition of the columns should be changed to some degree, for the sake of practice, perhaps moving all mortars to one column or changing the bulk of the machine guns from one column to another. These orders should be issued while on the move by the use of staff messengers, although in some cases it may be necessary to halt the regiment on an intermediate objective while the interchange of troops is made. Staff messengers move via horse or motor.

The colonel should make at least one inspection of all troops of both columns at some time during the initial stages of the advance by the use of his command car.

When arriving at a point about one mile from M and S, where the ground permits maneuver, the approach march formation should be adopted in case the troops are not already in such formation. At this point the colonel should decide to organize the command into a main attack force, a secondary attack force and a reserve.

He effects the organization by an interchange of troops in the same manner as he has been doing. There is no rule for the formation of the main attack force except that it usually will constitute the bulk of the attacking strength.

It remains for him to order the advance of the elements of the command to attack positions and to make arrangements for coördinating their action.

To order the advance to attack positions he may issue instructions entirely by means of staff mesengers, he may halt the movement and assemble the commanders of each element or he may visit each element in turn, indicating the objectives and the routes thereto. The latter method is the best, though all should be practiced from time to time.

At the time the main attack force is told to move to M, the secondary attack force is told to move to S and the position of the reserve has been indicated, measures for signalling the time of launching each attack should be ordered. These measures should also be varied from one exercise to another, sometimes consisting of a definite hour of attack, sometimes of a visual signal and sometimes being disseminated by staff messengers. The main attack force may be required to notify regimental headquarters of its readiness to attack.

If no more terrain exists than the points M and S and the one mile semi-circle on one side of them, a great deal of training can be accomplished by repeating this exercise over and over, varying the composition of the columns and the make-up of the attacking elements with each exercise. There is an infinite variation to be had in the control methods used, also.

The standard to be attained with practice is the ability of the regiment to move smoothly along its route of advance, changing its formation and the composition of its elements, and having objectives assigned to each so that there is little or no interruption of forward movement. Because the colonel is making the decisions as he goes along and issuing his own orders, there is no need for the staff to go into a huddle. The speed with which orders are disseminated is simply dependent upon the amount of lead present in the carcasses of the command and staff.

It is obvious that after the command has been organized into its attacking elements, the movement of these elements to the positions M and S, and the movement of the reserve to the position indicated for it are essentially squadron problems. The squadrons, reinforced by suporting weapons, move to the positions M and S by the same means already used by the regiment, although the movement is correspondingly easier because of the ability of the squadron commander to control directly by means of drill commands and signals.

As the training of the regiment develops, more complicated missions for scout cars and patrols may be worked out. Squadrons may be required to make their final movement to attack positions in varying formations. Supporting weapons should be required to reconnoiter for and to assume positions which will support the attack of the unit to which they are attached.

After proficiency in varying forms of this exercise has been attained, the regimental commander should inject some hasty action situations into the advance. At different stages of the approach, the squadron columns should be suddenly attacked by a mobile flagged or imaginary enemy and the squadron commanders tested on their ability to launch their troops successively to shock action under fire support of machine guns. To guard against the need for hasty action, the squadrons should be practiced in conducting the approach with the light machine guns of the squadron assembled under the control of the squadron light machine gun officer; near the termination of the approach the light machine guns should be trained to rejoin their troops as ordered by the squadron commander, either with normal assignments or with the light guns of the squadron support troop attached to one of the assault troops of the squadron.

Finally, when the regiment has been brought to real proficiency in executing the formations of the approach and occupation of a position, the members of the staff platoons may be required to work on a few of the forms and reports such as journals, estimates and situation maps, always remembering that the movement of troops comes first and the maintenance of records last. Records, overlays and what not can be worked on during halts between bounds or during the time the elements of the regiment are going into attack positions.

It seems obvious that if this means of control can be practiced by a regimental staff, a brigade or division staff could adapt themselves to similar methods, adding only the increased intervals and distances necessary to reach regimental or brigade columns. Where mechanization and vehicular radio is available, the staff officer need only ask himself whether or not it would be advantageous to the recipient of orders if he were to deliver the instructions in person. The time element will seldom give an advantage to radio, though radio can always confirm orders delivered by other means.

We believe that control methods such as have been described are absolutely vital to the conduct of modern troops. It is only too apparent that the staff huddle, the detailed written exercise and the formal orders have proved insurmountable obstacles to the maneuvering of horse cavalry. To imagine that they will work any better for mechanization is simply ridiculous.

Notes From the Cavalry Board

> ***"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."***

Changes in Personnel.—The Cavalry Board regrets the loss of Colonel Dorsey R. Rodney, Cavalry, who is now Assistant Commandant, The Cavalry School, and Major Richard E. Tallant, Cavalry, who has been ordered to duty in the Inspector General's Department at Camp Jackson, South Carolina.

The following projects have been under study or test since the last issue of The CAVALRY JOURNAL:

Basic Field Manual, FM 26-60, Gun, Machine, Caliber .50, M2, HB (Flex) Ground.
Basic Field Manual, FM 23-45, Gun, Machine, Caliber .30, HB (Flex) Ground.
Mobilization Training Programs for Enlisted Replacement Establishments.
Soldier's Handbook.
Small Bore Practice in Caliber .50 Machine Gun Training.
Antitank Weapon (37-mm. Antitank Gun, M3).
Pull-type Single Shot Auto-fire Trigger Mechanism for Browning Machine Gun, Caliber .50, M2, HB.
Magazines for Automatic Pistol, Caliber .45, M1911.
Light Barrel for Machine Gun, Caliber .30, M1919A4.
Improvised Emergency Machine Gun Mount for Train Defense for Use Pending Development of Standard Mount.
Bullet Seal Inner Tubes.
Cleaning Staff, M3, for 60-mm. Mortar.
81-mm. Mortar Pack.
81-mm. Mortar Carriage, T-3, Brandt Type.
Tripod Mount, T43, for Browning Machine Guns, M1917 and M1919A4.
60-mm. Mortar and Pack Accessories.
20-mm. Solothurn Antitank Gun, S18-1010.
Grenades, for use by Cavalry.
Halter, Tie Rope.
Development of New Vehicles for Cavalry.
Equipment for Motorcyclists.
Low Quarter Shoes.
1-ton, 2-wheel Streich Cargo Trailer.
Modification of Horse Equipment (Bridles, Bits, Horse Covers, Stirrup Straps, Stirrups).
Modified Dismounted Canteen Cover for Use Mounted.
Horse Gas Mask, Canister Type.
Watches, for Examination.
Officers' New Model Cap.
Tactical Practicability of Antigas Protection for Horses.
Radio Needs for Cavalry.
Radio Contact Code.

☆ ☆ ☆ ☆

"War is no exact science; it has no fixed code of rules. In war it is always the unexpected that happens. There is no finality in either strategy or tactics. History tells us that in almost every campaign some new factor—produced sometimes by accident, sometimes by the genius of an individual, sometimes by a national instinct—takes even the most experienced by surprise and often completely reverses the accepted teaching of the time."

* * *

"Frederick the Great, in speaking of officers who relied on their practical experience alone, caustically remarked that there were in the army two commissariat mules which had served through twenty campaigns, 'but' he added significantly, 'they are mules still.' "

—Henderson.

The Birth of a Streamline Pack

By CAPTAIN R. M. BRIGHTBILL, Troop K, 104th Cavalry

In the pitch dark of the night, April 24-25, 1931, ninety-nine officers and one hundred and ten enlisted men of the 2d and 13th Regular United States Cavalry, with the school troops of Fort Riley, were nine-mile trotting and four-mile walking over the rain drenched roads of Kansas. The chuck holes, filled with water, were at their best.

This contingent from the Cavalry School was assigned the mission of completing a one hundred mile forced march in twenty-four hours, to try the nine-mile trot as an experiment, and to use the different diagonals in posting. At least that was all Sergeant "B," a student of the N.C.O. Class, knew of the situation.

The mission was accomplished, 100.4 miles being covered in twenty-three hours and ten minutes, which included an approximate four-hour halt at Clay Center. The command returned to the post, fully capable of further effort. (Reference, official report of the Cavalry School.) The march, it was said, was a big success, but even after four months of the Life o' Riley seasoning Sergeant "B" was burnt up.

Sergeant "B" wanted to know:

WHAT was the reason for using the very rough (and they are rough to ride upon after 50 miles) surcingle over top of the saddle, which caused the burning and pealing of skin from soldiers' posteriors.

WHEN will they ever do away with our present cantle roll which made mounting and dismounting so difficult (try swinging that right leg clear of a full cantle roll after 60 miles).

HOW come you must open three saddle bag straps and conduct a diligent search for the curry comb at each halt, to hook stones from the horses' feet. (After the third halt Sergeant "B" carried his curry comb in his raincoat pocket, but observed some soldiers faithfully wearing out their saddle bag straps and their patience at each halt.)

WHERE was the extra man on the line to be found, to help the odd man throw his fully packed saddle onto the horse that shied at the balloon-like object being carried toward him.

WHY was it necessary for the large black and blue marks on each leg, caused by the gun, boot and saber. (1931, saber then in use.)

Having seen motion pictures of the cavalry of other armies, Sergeant "B" decided then and there that something should be done about the United States Cavalry pack, which seemed to him, way out of line with the secure, comfortable and compact looking packs of other nations. There began the birth of an idea, a dream of the day when he would make up a pack to his liking, and submit it to the army for trial.

Came a day years later when the former Sergeant "B" was given command of a National Guard troop of Cavalry. The annual encampment, with its one Sunday afternoon of rest, appears. The flies were bad and the bunk was hot. Commanding Officer "B," remembering his vow to some day make that pack, rouses the first sergeant from his bunk, bellowing, "A new pack is to be made at once for the United States Cavalry."

The sergeant blinks, rubs the sleep from his eyes, blinks some more, and reports at the picket line ten minutes later with a grouch, plus equipment "A."

Three hours later, the pack is completed and the sergeant has ridden it for one-half hour at all gaits. He looks amazed and utters, "We got somethin' here."

Commanding Officer "B" requests an interview with the squadron commanding officer, who calls the colonel, who in turn runs for the general. The general appears with a flock of regular army instructors at his heels, wearing broad smiles.

Questions are asked, nine at a time. Answers are given, one at a time, by the now perspiring Commanding Officer "B," while his heavy sergeant is galloping in circles with the streamline pack, wearing a grin of ease, comfort and satisfaction.

In twenty minutes the decision is made. Commanding Officer "B" will be allowed to try the new pack with his entire troop for the balance of camp. This from the general, the colonel nods approval, the major beams with pride, and the instructors say, "It may work."

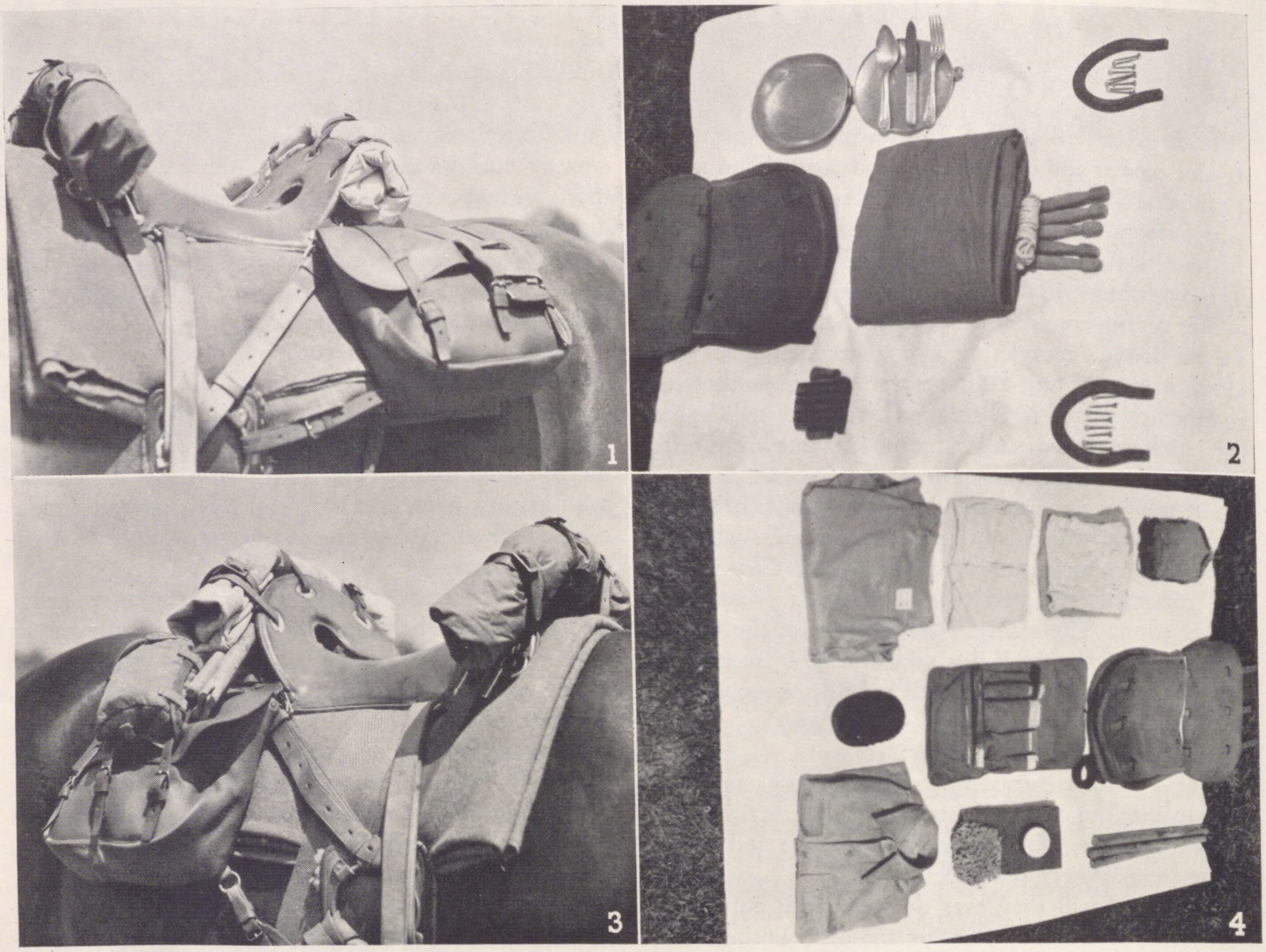
Troop "K" of the 104th Cavalry, P.N.G., were instructed during hours after mess in the evening, and thereafter used the new pack whenever possible. During the field maneuvers of the 1939 encampment the streamline pack met severe tests, while the greater part of the troop was broken up into small reconnaissance patrols, some of which marched seventy miles. At no time during the maneuver were any weaknesses found in the pack, and the following outstanding features were noted:

> Pack is less bulky, permitting greater freedom of movement in dense brush and over difficult terrain.
>
> Establishment of bivouac completed in about one-half of the time required when using the old pack.
>
> Movement from bivouac completed in about one-third the time required if regulation pack were used, especially in night movements.
>
> During the march of approximately seventy miles not one soldier was eliminated due to his saddle slipping.
>
> There were no saddle sores within the troop at any time.

In making his official report to his squadron commanding officer, Commanding Officer "B" listed the following advantages of the streamline pack over the regulation pack, as the results of the first test:

Decreases burden of trooper in saddling (only one man required).

Improves the appearance of the packed saddle.



THE STREAMLINE PACK

1—Near side. 2—Contents: near side saddle bag. 3—Off side. 4—Contents: off side saddle bag.

Allows more freedom and comfort in mounting, dismounting and riding.

Insures a more secure pack.

Horse and personal equipment secured much quicker from cantle bags while on the march.

Allows instructors and officers to easily pick out men lounging in the saddle and riding the cantle.

The two blankets under the saddle, properly blanketed and pulled up into the pommel prior to cinching, will insure less saddle sores, and considerably increase the comfort of the horse in carrying his burden.

The surcingle under the saddle insures the trooper that his blanket will not slip while saddling, make the seat of the soldier more comfortable, and prevent the double blanket from slipping up into the saddle seat.

Curry comb may be secured in a moment at each halt for cleaning feet.

Horses may be fed without deranging the raincoat.

Raincoat may be secured without deranging feed and nose bags.

Allows more freedom in close order formations.

Due to the ideal weather conditions prevailing during the 1939 Annual Encampment, the following water test was made to determine what would happen in case of severe rain storms. These tests were conducted with the unmodified McClelland Saddle.

Water was applied from a hose for fifteen minutes with a medium spray, which resulted in only small parts of the two upper folds of the top blanket becoming wet. Water was again applied on the same pack for fifteen more minutes (total thirty minutes), water having the full force of a drenching rain, which resulted in four folds of the top blanket becoming wet, the lower or horse blanket remaining perfectly dry. The lower blanket, in extreme weather conditions could be used as a bed blanket, and it is believed that during periods of heavy rain, with troops mounted on modified saddles, raincoat on and properly worn, that 95% of the top blanket and all of the lower blanket would be kept dry by the saddle, saddlebags and raincoat.

DESCRIPTION — STREAMLINE PACK

a. Component parts:
  (1) Saddle bags.
  (2) Cantle roll.
  (3) Pommel roll.
  (4) Canteen, cup and cover, with strap.

(5) Rifle and scabbard.

(6) Surcingle.

b. Saddle bags:

(1) The near (left) saddle bag contains horseshoes, horseshoe nails, tent shelter-half, 5 pins and one rope, tent shelter. The horseshoes, horseshoe nails, pins and rope are inserted between the folds of the shelter half, which is folded to fit the saddle bag, and placed in the saddle bag next to the horse. The patch pocket contains the mess kit complete. When a cooked meal is carried it may be placed in the mess kit. The curry comb is secured on top of the near saddle bag flap by inserting the middle and rear saddle bag straps through the web loop of the comb.

(2) The off (right) saddle bag contains the horse brush, grooming cloth, saddle soap in container, sponge, personal clothing and toilet set. The second ration, if carried, is placed in this bag.

(3) As rations are consumed, horseshoes used, etc., other articles should be shifted from one bag to the other in order to maintain an even distribution of weight.

c. Cantle roll:

(1) This roll is composed of one bag, feed, and one bag, grain.

d. Pommel roll:

(1) This roll contains either the raincoat or overcoat, rolled from the collar toward the bottom. It is folded so that the length of the roll shall not exceed eighteen inches.

e. Pole, tent shelter, and canteen, cup and cover.

(1) The pole, tent shelter, is fastened by the center cantle coat strap, between the folds of the pole, and the right front saddle bag strap through the folds and over the loose end of the pole.

(2) The canteen and cup are nested and secured inside the cover and then snapped to the right cantle ring. The cover is fastened tight to the saddle bag by buckling the front two right saddle bag straps over the canteen cover strap where it passes under the bottom of the canteen cover.

f. The rifle scabbard is secured to the left side of the saddle attached to the pommel ring by the upper strap of the scabbard and to the cantle ring by the lower strap. Both straps are so adjusted that the scabbard will hang at a 30 degree angle with the vertical. The rifle is not inserted in the scabbard until after the horse is saddled.

g. One blanket, bed.

(1) This article is folded to approximately the same size as the saddle blanket. It is placed on top of saddle blanket. Both blankets are then secured to the horse's back by the surcingle. The saddle can be packed by one man after it is placed on the horse easier than when on the ground. Care must be used in raising the blankets well up into the pommel arch so that the withers may not be compressed when the saddle is properly adjusted.

The streamline pack was submitted to the Cavalry Board, Fort Riley, Kansas, for test, with the following results:

Troop "B" of the 2d Cavalry on a three-day march, covering a distance of thirty-eight miles, including approximately twelve miles of night marching, and Troop "E" of the 2d Cavalry, on a six-day march, covering a distance of approximately 110 miles, which included eighteen miles of night marching, with fair and moderate weather, over rolling country with sufficient roads and paths to offer good conditions for cavalry marches, report the following:

> Each of the component parts of the pack stood up in excellent condition throughout the march.
>
> No sore backs were noted on any of the animals.
>
> It enabled the troopers to have more ease in the saddle because of less bulky equipment being in their way.
>
> Troopers were keeping themselves better seated in their saddles.
>
> The streamline pack shows marked advantages over the standard pack.
>
> The streamline pack is more compact. It gives the individual trooper more freedom of movement during charges and other hasty action.
>
> The new pack decreases time required for saddling.
>
> Facilitates officers to easily pick out men who do not have the proper seat in the saddle.
>
> Causes less confusion in saddling while breaking camp during the night.
>
> Makes a neater arrangement and improves the appearance of the packed saddle.

*NOTE: Due credit should be given commanding officer, Troop "B," 2d Cavalry, for the changing of Pommel and Cantle roll. Original Streamline Pack carried the raincoat on the cantle and the grain and feed bag on the pommel. This change was under advisement in the troop but recommendations from the Cavalry School for this change were received before it could be put into effect. Commanding officer, Troop "B," also recommended that the curry comb be secured by two straps instead of one. This change had been made and was in use prior to receiving the recommendations of commanding officer, Troop "B."

The disadvantages as noted at the Cavalry School:

1. This pack does not permit the trooper to eliminate the cantle roll on forced marches, sending these rolls ahead by prime movers.

*NOTE: This test has been made in Troop "K," 104th Cavalry, and it was found that with National Guard soldiers, the pack can be converted into a regulation cantle roll, ready for the prime movers in fifteen minutes. It is assumed that it could be accomplished much quicker by Regular Army troops.

The average weight of men in Troop "K" is 149.2 pounds. The average weight of our horses is 1,050 pounds. There are instances of 160-pound men riding 950-pound horses, and 130-pound men riding 1,050 pound horses. The difference in weight of the cantle roll (7½ pounds) it is contended, would not make any material difference on a forced march, as the Streamline Pack in its entirety is distributed over the horse's back, instead of being carried in the cantle roll. It is believed that the disadvantages of loading cantle rolls on prime movers (taking from saddle, loading into truck, issuing cantle rolls on arrival in bivouac) is offset by the advantage of the trooper always having with him his equipment. A bed blanket on hand is worth two in the prime movers, especially if they break down, run out of gas, take the wrong road, or for some other reason they could not make contact with the troop. This would be especially true of patrols operating on their own, and who may not make contact with base camp for several days or longer.

---

*Author's note.

2. The method of carrying bed blanket will pinch withers and cause sore backs on high withered horses after they have lost flesh.

*NOTE: There seems to be a difference of opinion among Regular Army officers relative to this statement. It is believed that this would not be true of all horses, but would depend on the conformation of the horse. Some horses with sores on the withers are benefited by the use of the double blanket under the saddle, thereby raising the saddle from the withers. It would be possible of horses with long, prominent and very thin withers, in which case the soldier could revert to the regulation pack. For a horse of such conformation, the use of even one saddle blanket under the saddle, would undoubtedly cause the continual rubbing of the sore on withers.

3. The bed blanket becomes wet if it rains.

*NOTE: See tests conducted by Troop "K" with water on unmodified saddle.

The Cavalry Board, Fort Riley, Kansas, advises that they are reporting to the Chief of Cavalry on this test. In gist their decision is to the effect that they believe the pack has merit for special use of cavalry units, when operating in very rough terrain, and when out of touch with motor transportation. They are recommending that information about this pack be disseminated, but they do not believe that any change in regulations are indicated.

---

*Author's note.

A Doctrine

The place of cavalry in the National Defense is to fill that requirement of a balanced army which demands a fighting element superior to the main element—infantry—in mobility near and on the battlefield; and possessing in common with that arm the ability to engage in offensive and defensive fighting, whether independently or in conjunction with other arms.

It is cavalry's place to be ready, through its high mobility and fire power, to protect the infantry in its advance to battle, and to gain or assist in gaining general and detailed information of the enemy; to cooperate with the infantry and other arms in battle, by protecting exposed flanks, or acting as a reserve capable of the most rapid movement to an engagement at either nearby or distant critical points in the line of battle; to be ready at the crisis of battle to convert a decision gained by the army into a complete destruction of the enemy; or to prevent such fate to our own army in case of failure.

—Cavalry Combat.

The First Thirty Days

By LIEUTENANT MARSHALL WALLACH, 11th Cavalry

On December 2d, almost three months since the expiration of my graduation leave, I finally joined my regiment, the 11th Cavalry, Colonel Homer M. Groninger commanding, stationed at Presidio of Monterey.

It was late Saturday afternoon when I reached Monterey, having motored down from San Francisco, and I wasted Sunday looking around, wondering how many days I would be given in which to fix up my quarters and get myself well-settled. I ceased wondering early Monday morning when I reported to Post Headquarters and heard Major Gerhardt, Regimental S-3, say to my troop commander, "Captain Glasgow, the colonel wants this new lieutenant ready for maneuvers in January. Take him in hand and give him the works!" That was a month ago. I have sampled the well-known "works" quite freely—and my quarters still need a good deal of fixing.

At the time of my arrival the regiment was undergoing intensive training preparatory to the winter maneuvers. For the first few days I trailed around in the tracks of Captain Glasgow and Lieutenant Walson, picking up odds and ends of what to do and what not to do, and getting underfoot as little as possible. My mornings were given over to horse exercise, squad and platoon drill, equitation, some work on advance guards, reconnaissance problems and stables. Afternoons were taken up by troop school, horseshoeing school, "military aid to the civil power" school and polo twice a week. My nights were spent on practice marches and night problems, interspersed with club parties, steak frys at Indian Village and an occasional evening at Del Monte. On the whole, a very full schedule.

Three days after being attached to Troop "E," a troop night patrol problem was ordered. At 2:00 PM Captain Glasgow gave me a map, compass, flashlight, a key, five men and a twenty-mile route which, to me, consisted mainly of unexplored canyons, cow trails and mountain ranges. With a great deal of optimism he said he would see me later at my objective. I sallied forth on my maiden journey, filled with high hopes and bonhommie, and in the end, I was able to hold up the captain's optimistic prediction, thanks to a corporal in my patrol who had "had all this stuff before."

The problem was a very simple one and merely required the dispatching of messengers at various points, and slipping around an occasional ambush. There was a slight delay while we cut a four-strand barbed-wire fence. This cutting was necessitated by the fact that the key for the reservation gate with which I had been so carefully supplied, would not fit the lock. I was later informed that there was another lock which the key did fit (and I still hear smothered remarks in reference to my safe-cracking abilities!).

A few more days of platoon drill, a couple of overnight bivouacs at Gigling reservation, and the time for the culmination of the platoon training had arrived. This climax took the form of a thorough practical examination, in which one platoon from each troop was to demonstrate its ability in dismounted drill, equitation, and a reconnaissance problem. Lieutenant Walson was designated as leader of Troop "E" platoon and made the necessary preparations. The troop commander told me to observe and profit by his actions, because in the not-too-distant future I might also be called upon to lead a platoon under similar circumstances.

Ah, yes. 'Twas well that I did! The tests were scheduled for Friday. And on Thursday afternoon the blow fell in the form of Lieutenant Walson being ordered to San Francisco for the purpose of accompanying troops to Hawaii. Thus leaving me "holding the bag," as I overheard one of the troopers remark in a lighter vein. The "bag" being a well-trained and well-mounted platoon.

Making a very hurried estimate of the situation I decided I could struggle through the dismounted drill phase, as we were using the new Infantry Drill for dismounted work and I had had the opportunity to pick it up while with the 16th Infantry at Fort Jay. Equitation didn't sound so hard but I was considerably in the shade as to where I was going to find an approved solution for the unknown quantity *x;* namely, the reconnaissance problem. However, I made a few notes, determined in what order I would give my close-order drill movements, supplying exercises and work by threes, then enumerated the points to be covered in my initial order for the reconnoitering party in the third phase of the test.

My platoon was up first to be inspected in the execution of dismounted drill. After a few preliminary throat-clearings and saber-loosenings on my part, and a general tightening of gun-slings and hitching up of belts by the men, we strode forward upon Soldier Field in the regulation manner to gain laurels and honor against some high-class competition.

All was going well until I discovered, to my utter distress, that I had given "To the rear" while the right feet of the marching men were in mid-air, and on the spot I learned that such a command when given in such a manner will produce a delicate tint of chaos in any organization. In order to rectify this error and show that it was just "one of those things," I ordered "Double-time, MARCH!" With many startled looks and muttered imprecations concerning "balled-up commands," the platoon picked up the D.T., some carrying their rifles on their shoulders—others coming down to the port. Ragged looking to say the least, and there went the first of many points destined to be lost that day. (I have since learned that it is customary in this regiment to precede "Double-time" with "Port Arms.")

The equitation phase consisted of leading the platoon over a drop-jump into the riding pen and there giving them supplying exercises, work without stirrups, use of the aids, work by threes and finally out of the pen by way of the same jump. In this mounted session I quickly saw that my trials and tribulations had just begun. Among the aforementioned trials was the work by threes which I proceeded to give at a gallop instead of a conservative trot, which was customary. I admit the effect was dashing, if nothing else—but it succeeded in losing whatever points were given on precision.

Finally I got the platoon out of the bull-pen with only one refusal and was then presented with the situation for the reconnaissance patrol, the last ordeal.

This sortie consisted of several problems, all of which were conquered with the aid of much coaching by my platoon sergeant. Although in no one phase of the test did we place last, our final score rather made me wish I had spent the day on the golf links.

On December 20th, Captain Glasgow took off on fifteen days' leave, which left me in command of the troop. From that date until Christmas Eve the regiment turned out daily in fatigue clothes and travelled to Camp Ord to prepare a site for the incoming increments of troops arriving for maneuvers. We dug latrines, holes, and trenches, pulled up stumps and leveled foundations—and in our leisure time stacked lumber and unloaded cement. My troop dug in with a will. In fact when a recruit from another organization asked one of the troopers of my command what regiment he was in, that soldier cheerfully replied, "the 11th Ditch-diggin' Dragoons!" Adaptability is a wonderful thing. . . . My administrative duties during this period were confined mainly to initialing the morning report and signing an occasional pass.

The usual Christmas holiday period was disregarded because of the important work at hand but two days, the 26th and 27th, were devoted to the Presidio Hunter Trials. In spite of the fact that there had been no time available for preparation, a very creditable two-day show was presented. There were about a dozen events, including besides the hunter and jumping classes, a point-to-point race which brought the events of the second day to an exciting close. Of the fifteen entrants in this event six finished, Lieutenant Stephen Downey being the victor. Covering a two and three-quarter mile course with more than twenty stiff fences and hedges, it was a race well worth seeing.

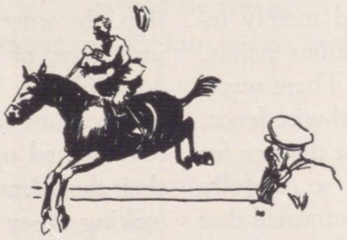
Although no preparation for the show had been made until the first day, everything went smoothly. I found an expert carpenter in my troop who constructed a judges' stand in about an hour. A bar was operated by Lieutenant Beere, and luncheon was served by one of the troop messes.

The remainder of the week was occupied by the usual platoon drill, portée loading, and the usual odds and ends of routine paper-work, such as checking clothing allowance, the monthly property inspection, auditing the troop fund, checking of the collection sheet. On the morning given over to portée loading, Troop "E," profiting by the examples of others, both good and bad, turned in the best time—ten horses loaded and tied in, in just nine minutes. Another drill period was profitably spent by taking a cue from Colonel Frank Thompson's book, *Chasing Villa.* We experimented and found that we could leave our mounts immobile and completely unattended if we linked each horse to one of his stirrup leathers. Tried the idea out with one platoon and did our best to stampede them, even to the extent of galloping madly among them, firing blanks and uncorking some fine rebel yells.

On the first attempt, many of the link straps were too long and several horses galloped off. We shortened the link straps and also hooked onto the D-ring of the cinch instead of the stirrup buckle, and then made a second trial which was highly successful. I was quite surprised to observe the improvement shown in this method over that of linking in couples, as the horse has less opportunity of injuring himself or damaging the saddle or deranging the pack.

So ended my first month of duty with the 11th Cavalry. If I had it to do over my choice of post and branch would be the same.

P.S.: I have just heard that I am to have the troop for the maneuvers, starting next week!



Unit Training Activities

5th Cavalry—Fort Clark, Texas

Lieutenant Colonel H. A. Flint, *Commanding*

The termination of the final phase of the Third Army maneuvers found the regiment (less the 1st Squadron) in position as Division reserve, nine miles east of Leesville, Louisiana, on the morning of May 24th, at 11 AM.

Upon orders from the Division Commander, the regiment moved to a position four miles east of Leesville and went into a rest camp along with the other regiments of the 1st Cavalry Division awaiting the information as to how and when the regiment would depart for its home station.

Late in the afternoon of May 24th, orders were received that the 1st Cavalry Brigade would start its homeward movement in three serials. Beginning the morning of May 29th, Serial No. 2, Train No. 1, and Serial No. 3, Train No. 2, departed from Leesville with 23 officers, 326 enlisted men and 689 horses at 10 AM and 1 PM respectively. Serial No. 3 arrived about 8 AM and Serial No. 2 arrived about 10 AM, May 30th at Spofford, Texas.

The motor convoy, Serial No. 1, consisting of 16 officers, 356 enlisted men and 52 vehicles under the command of Lieutenant Colonel Roy E. Blount, left the rest camp at 6:45 AM, May 30th. This serial arrived at Fort Clark Saturday morning at 11 AM, June 1st.

Halts for the night were made at Houston and San Antonio. Total miles covered by the convoy were 552 miles.

The week following the arrival of the Brigade at Fort Clark was declared a holiday. Only the necessary guard and fatigue details were accomplished.

Normal training activities began June 10th. Dismounted drill, mounted drill, combat and musketry firing, equitation, schools, range practice, mounted and dismounted ceremonies constituted the June 10-30 curriculum.

It was with deep regret that orders were received transferring the regimental commander, Colonel C. P. Stearns to another station as Chief of Staff, 6th Division, Fort Snelling, Minnesota.

On the evening of June 22d, a lawn party and dance sponsored by the enlisted men of the regiment was held at the Enlisted Men's Service Club in honor of Colonel and Mrs. Stearns.

On the evening of June 25th a reception and dance was tendered Colonel and Mrs. Stearns by the officers of the regiment at the Officers' Club.

On the morning of June 26th, traditional honors for departing regimental commanders were rendered as Colonel and Mrs. Stearns departed the post.

Since the maneuvers in Louisiana ended, many changes in officer personnel have occurred. All regular officers attached to the regiment for the duration of the maneuvers departed the day following the completion of the final phase of maneuvers.

In addition to these, Colonel J. A. Robinson was ordered to Omaha, Nebraska, on Organized Reserve duty; Lieutenant Colonel Roy E. Blount, ordered to Fort Riley, Kansas, for duty with the Command and General Staff School; Lieutenant Colonel Gordon J. F. Heron ordered to Fort Hayes, Ohio, on Organized Reserve duty, have departed for their new assignments.

The Fort Clark Horse Show Association held their first horse show of the summer on the afternoon of Saturday, June 22d.

Results of the four classes were as follows:

Class I. Green Jumpers, Officers and Ladies. First place: *Tandem,* ridden by Mrs. John R. Pugh; second place: *Hubert,* ridden by Second Lieutenant Clifford L. Miller, II; third place: *Waterboy,* ridden by Second Lieutenant William L. Turner; fourth place: *Springtime,* ridden by Mrs. William Calaway.

Class II. Open Jumping, Enlisted Men. First place: *Golddigger,* ridden by Sergeant Mark Perryman, Troop "E," 5th Cavalry; second place: *Lady Balbec,* ridden by Technical Sergeant Sidney M. Meeks, Brigade Headquarters Troop; third place: *Denny,* ridden by Corporal Robert L. Hyde, Troop "F," 5th Cavalry; fourth place: *Abie,* ridden by Corporal Thomas W. Byrne, Troop "F," 5th Cavalry.

Class III. Open Class, Second Lieutenants. First place: *Denny,* ridden by Second Lieutenant Clifford L. Miller, II; second place: *Domino,* ridden by Second Lieutenant John J. Carusone; third place: *Golddigger,* ridden by Second Lieutenant Charles J. Parsons, Jr.; fourth place: *Hubert,* ridden by Second Lieutenant Clifford L. Miller, II.

Class IV. Open Jumping, Officers and Ladies. First Place: *Sir Conrad,* ridden by First Lieutenant John R. Pugh; second place: *Gargona,* ridden by Second Lieutenant John J. Carusone; third place: *Lady Balbec,* ridden by Second Lieutenant Charles J. Parsons, Jr.; fourth place: *Hubert,* ridden by Second Lieutenant Clifford L. Miller, II.

The Organized Reserve Corps camp opened July 7th. Forty-four officers reported for this camp. This year there will only be one camp conducted. Major James B. Taylor, Cavalry Instructor, is here again this year with the camp.

The post baseball team has begun its schedule and has to date played four games winning three and losing one.

7th Cavalry—Fort Bliss, Texas

LIEUTENANT COLONEL TERRY DE LA M. ALLEN, *Commanding*

April and May found the regiment in the maneuver area (East Texas-Louisiana) participating in the IX Corps and III Army Maneuvers. The regiment proved itself capable in every mission assigned to it and all officers and men conducted themselves in a manner that served to keep up the high standard of proficiency that is a well known characteristic of the regiment.

Colonel W. W. West commanded the regiment; Major Louis G. Gibney commanded the 1st Squadron and Major Percy S. Haydon commanded the 2d Squadron. The maneuver was conducted under war conditions and was very realistic at times, insofar as the source of supplies were concerned. The new type "C" Field Ration was furnished the regiment as a test.

On May 28th, a part of the regiment, comprised of detachments of specially selected personnel from each troop, entrained at Leesville, Louisiana, for Fort Bliss, the home station, taking all of the horses with them; the regiment, less said detachments, returned to the regimental bivouac area until the 29th, when they entrucked to make the march back to Fort Bliss by motors.

The regiment reached Houston, Texas, on May 29th and spent the night there in a very muddy bivouac; the night of May 30th in Fort Sam Houston where it bivouacked at Dodd Field; the night of May 31st at Fort Clark; the night of June 1st at Fort D. A. Russell. On the morning of June 2d the regiment started out on the last day of the trip and arrived in Fort Bliss in time for dinner.

Upon the return of the regiment from maneuvers a program of training was inaugurated and is being carried out that includes; preparation for participation in the forthcoming maneuvers in August in the area just vacated; annual pistol practice, both mounted and dismounted; recruit training and furnishing of details for the annual R.O.T.C.

On June 25th, the regimental organization day was observed and celebrated by limited mounted and dismounted games including a mounted tug of war, a dismounted tug of war, a potato race, a three-legged race and the musical chair. The evening was occupied by dancing in the new 7th Cavalry Tactical Garage. A cold supper was served by the combined efforts of all regimental messes and beer was enjoyed by all hands. The evening was highlighted by a short talk by the regimental commander, who explained why the regiment is called "Garry Owen" and how we came by the "Garry Owen Spirit." This was followed by the orchestra playing the regimental march (Gallop) "Garry Owen."

A farewell party is being planned for the regimental commander Colonel West, who is being relieved from assignment to the 7th Cavalry. The party is to be at the Waterfill gardens in Zarigoza, Mexico. All members of the regiment feel that they are losing a great friend when the colonel goes to his new assignment, but we are wishing him the best of good fortune in his new assignment.

* * *

8th Cavalry—Fort Bliss, Texas

COLONEL JOSEPH P. ALESHIRE, *Commanding*

After four weeks of campaigning in East Texas and Louisiana, it was a glorious moment when "Bugs" received the dot and dash message telling us the "Battle of the Bayous" was ended at 11:00 AM on May 25th.

The regiment had marched at 9:00 AM on the 23d of May, some 17 miles to an assembly area, arriving at 1:00 AM, when a hot meal was served. As this was the beginning of the end, and as our campaign had started in a downpour of rain, it was only fitting and proper that we be again drenched to the core.

Rain started falling about 1:30 AM, and continued until late in the morning when the sun came out. Again during the afternoon "the bottom dropped out," and it seemed there was no end to the rain. But just as the evening meal was ready to be served the downpour ended. After wading in water four to six inches deep the kitchen was reached. With the aid of "Slum and coffee" smiles again returned to tired, but rain washed faces. The maneuver was continued the following morning, and as previously stated, terminated at 11:00 AM.

Troops marched to bivouac area in the vicinity of Leesville, Louisiana, where a hard-earned rest was enjoyed.

We entrained at Leesville on May 28th for return to Fort Bliss, arriving at 10:00 AM, May 30th. To the "Border Rats" the sand dunes and mesquite were a paradise regained. The detraining point was lined on both sides with cars of "Maneuver Widows and families" to welcome us on our arrival.

The motor convoy consisting of sixty-five vehicles, nine officers and three hundred and ninety-one enlisted men departed from Leesville on May 29th. Returning over the same route previously taken to Jasper, Texas, the convoy arrived at the Post on June 2d.

The period June 1st to 8th was used for rest and clean-up after return from the maneuver area. Preliminary marksmanship practice was started on June 10th. Range practice began on the 17th, and is continuing into July.

On July 4, 1940, the 8th Cavalry took part in a parade of troops stationed at Fort Bliss in the city of El Paso, Texas.

A Recruiting Demonstration Unit commanded by Second Lieutenant Edward McC. Dannemiller, 8th Cavalry, left Fort Bliss on July 6th and will return about July 30th. Demonstrations will be given by the band, the scout car section, the rifle and HMG section and the 75-mm. section. Most of the larger cities of New Mexico and Arizona will be visited.

A Special Weapons Troop, commanded by First Lieutenant Frederick H. Gaston, Jr., was activated on July 8, 1940. Second Lieutenant Glenn S. Finley, Cav-Res., was also assigned to the troop. As a nucleus of the troop one staff sergeant, two sergeants, five corporals, one private first class and thirty-five privates were transferred in grade.

Upon return from the Army Maneuvers baseball activities were started in the regiment. A group of thirty-five enthusiastic candidates turned out which should assure a good team. Several practice games have been played, with the 8th Cavalry the victor in all contests.

The majority of our polo ponies were taken on maneuvers, so for the last month polo in the regiment has been necessarily to recondition the ponies.

At present the regiment has two teams, the Blues and the Browns. Each team has five players, and each player has five or six playing ponies and one or two green ponies. Six-period games are played by each team twice a week. In addition to the above two teams, several noncommissioned officers and inexperienced officers are working regularly and will soon be in condition to form a team. It is the policy of the regiment to develop an interest for polo in the greatest number of officers and men, for it is believed that it will develop horsemanship and horsemastership, and result in better-trained horses.

On May 27th, three prisoners who were working at the Post Nursery overpowered their guards taking the pistols away from them. Both sentries immediately ran to the caretaker's house and reported the circumstances to Corporal Glen D. Franklin, of Troop "E," 8th Cavalry, who is in charge of the Nursery. While Mrs. Franklin called the Post Stockade to report the escape of the three prisoners, Corporal Franklin obtained his old deer hunting rifle, and with Master Sergeant John J. Hacking (retired in 1928, Headquarters Troop, 8th Cavalry), using Sergeant Hacking's car, gave chase. The escaping prisoners were soon located, after they had confiscated a truck, and abducted two employees of a nearby dairy. The prisoners, not knowing the sandy trail they atempted to use in their escape, soon were bogged down in deep sand and forced to abandon the truck. Upon leaving the truck, running cross country and dodging behind the numerous sand dunes, they both opened fire on their pursuers. But even though their legs were good, and running hard, they rather underestimated the fact that Corporal Franklin carried his trusty rifle, and knew a thing or two about the use of it. Deciding that life was sweet, they politely walked from behind a sand dune, some 200 yards distance from Corporal Franklin with their hands held high. Corporal Franklin shouted for them to drop their pistols and come forward, which they unhesitatingly did. Sergeant Hacking searched them, and finding no other weapons and after recovering the pistols, Corporal Franklin and Sergeant Hacking started them marching cross country, back to their bastile. To the relief of the prisoners, the guard truck came up and took them back to the stockade.

Corporal Franklin enlisted in the Army at Oklahoma City in 1925, and has been a member of the 8th Cavalry since that time. Two of his sons are also in the Army, one being a corporal in Troop B, 8th Cavalry, the other now serving in the Philippines.

The following commendation has recently been received from General Kenyon A. Joyce, the Division Commander: "On May 27, 1940, three general prisoners, working near the Post Green House, Fort Bliss, Texas, overpowered and disarmed their two guards and escaped in a civilian truck which they had seized by assaulting the driver.

"On being informed of the escape Corporal Glen D. Franklin, 6230628, Troop 'E,' 8th Cavalry, who was on duty at the Green House but not responsible for the security of prisoners, obtained a rifle and an automobile and promptly pursued the fugitives, overtaking them and forcing them to surrender after an exchange of shots.

"Corporal Franklin's prompt and courageous action is worthy of the highest praise as a fine example of soldierly conduct in which he upheld the high standards of the 1st Cavalry Division."

Corporal Franklin has recently been transferred to the newly-formed Special Weapons Troop, 8th Cavalry, and will soon be promoted to the grade of sergeant in the organization.

Captain Alexander M. Miller, III, has been placed on detached service at Fort Logan, Colorado, on Recruiting Service. The loss of Major James S. Rodwell was regretted by all. Major Rodwell went to General Staff duty at Fort Benning, Georgia.

The following lieutenants, Cavalry Reserve, have been assigned to the regiment for six months' active duty:

First Lieutenant Max M. Morrison, Oklahoma City, Troop "A"; Second Lieutenant Ralph M. Bilby, Tucson, Arizona, Troop "A"; Second Lieutenant John C. Greer, Tucson, Arizona, Troop "E"; Second Lieutenant Claude E. Taylor, Miami, Arizona, Troop "F"; Second Lieutenant George J. Landavazo, Gallup, New Mexico, Troop "E," and Second Lieutenant Franklin L. Quinton, Wynona, Oklahoma, Troop "B."

* * *

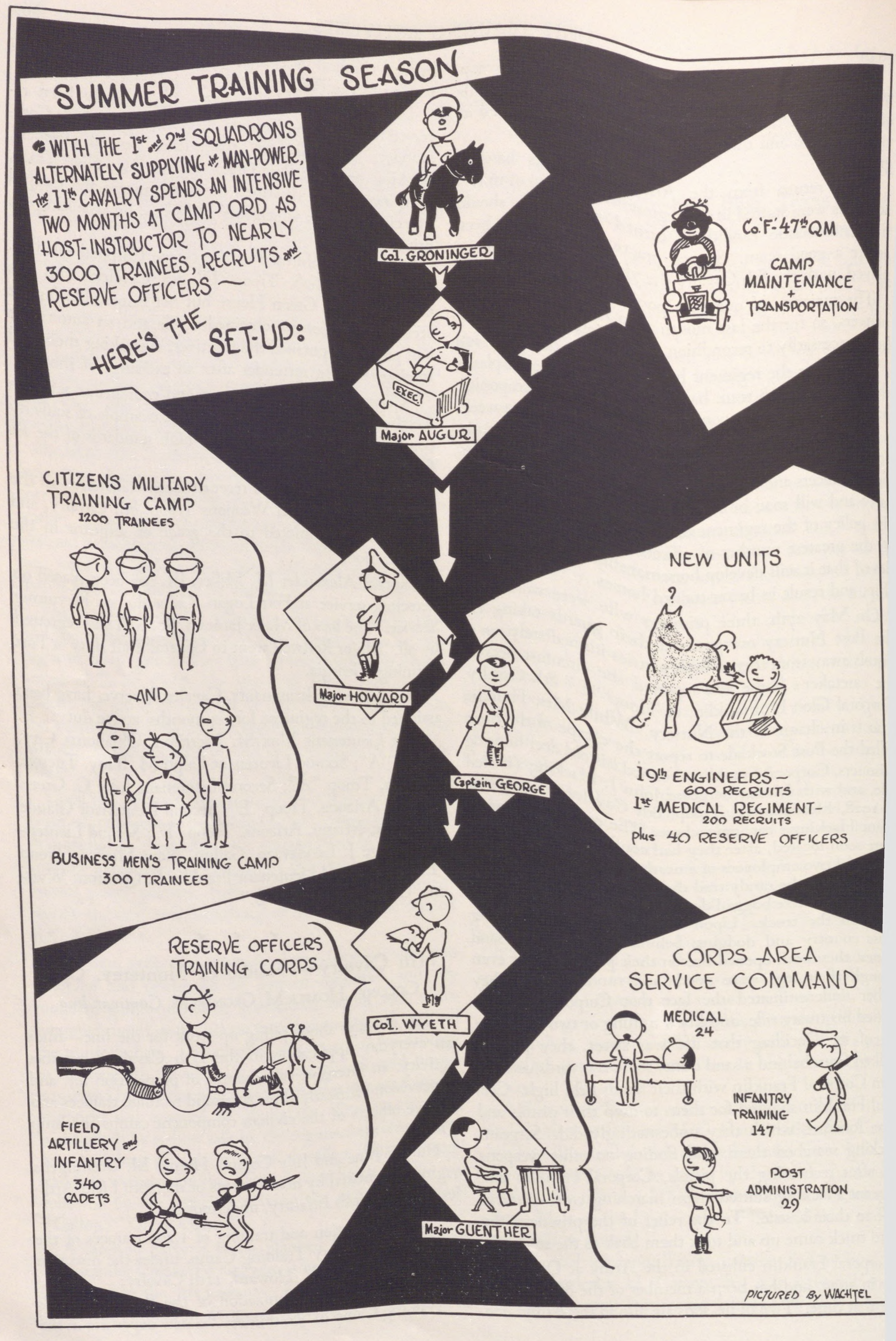
11th Cavalry—Presidio of Monterey, Calif.

Colonel Homer M. Groninger, *Commanding*

The old saw about piling up work for the line—finds an everyday application in the 11th Cavalry's summer activity, an intensive two months of preparation for, and supervision of, nearly three thousand recruits, trainees and reserve officers of the civilian component camps at Camp Ord.

During June and July Colonel Homer M. Groninger's regiment, assisted by detachments of the 76th Field Artillery and the 30th Infantry, undertook:

> Administration and training of 1,200 trainees of the Citizens' Military Training Camp, under the direction of Major Alton W. Howard, 11th Cavalry;
>
> Complete new organization of the Business Men's Training Camp of 300 trainees—a new departure in the



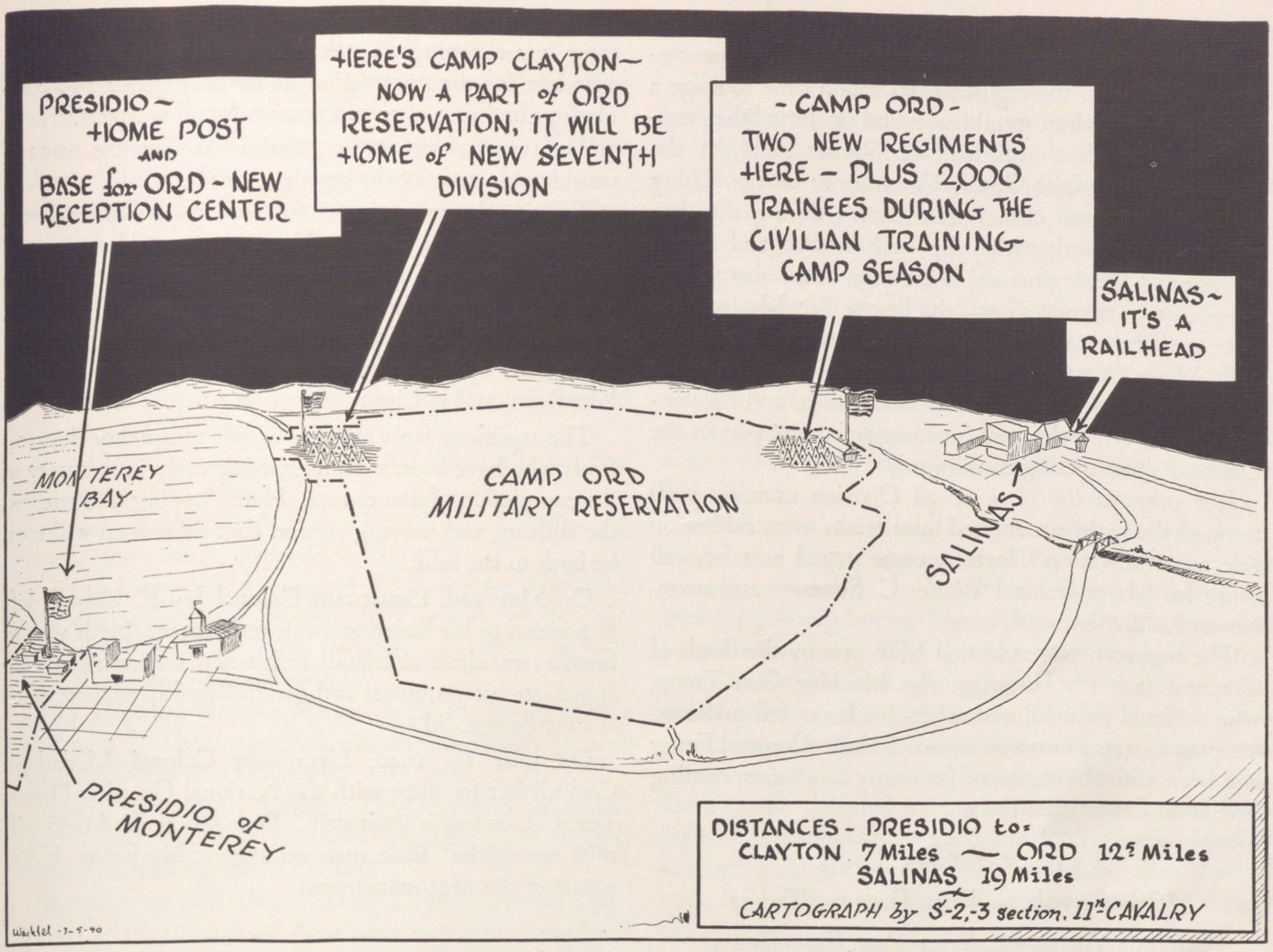
SUMMER TRAINING SEASON

WITH THE 1st and 2nd SQUADRONS ALTERNATELY SUPPLYING the MAN-POWER, the 11th CAVALRY SPENDS AN INTENSIVE TWO MONTHS AT CAMP ORD AS HOST-INSTRUCTOR TO NEARLY 3000 TRAINEES, RECRUITS and RESERVE OFFICERS ~

HERE'S THE SET-UP:

Col. GRONINGER
EXEC.
Major AUGUR
Co. 'F' 47th QM
CAMP MAINTENANCE + TRANSPORTATION
CITIZENS MILITARY TRAINING CAMP
1200 TRAINEES
-AND-
BUSINESS MEN'S TRAINING CAMP
300 TRAINEES
Major HOWARD
Captain GEORGE
NEW UNITS
?
19th ENGINEERS - 600 RECRUITS
1st MEDICAL REGIMENT - 200 RECRUITS
plus 40 RESERVE OFFICERS
Col. WYETH
RESERVE OFFICERS TRAINING CORPS
FIELD ARTILLERY and INFANTRY
340 CADETS
Major GUENTHER
CORPS AREA SERVICE COMMAND
MEDICAL
24
INFANTRY TRAINING
147
POST ADMINISTRATION
29

PICTURED BY WACHTEL


PRESIDIO ~ HOME POST AND BASE for ORD - NEW RECEPTION CENTER
HERE'S CAMP CLAYTON ~ NOW A PART of ORD RESERVATION, IT WILL BE HOME of NEW SEVENTH DIVISION
- CAMP ORD - TWO NEW REGIMENTS HERE - PLUS 2,000 TRAINEES DURING THE CIVILIAN TRAINING CAMP SEASON
SALINAS ~ IT'S A RAILHEAD
MONTEREY BAY
CAMP ORD MILITARY RESERVATION
SALINAS
PRESIDIO of MONTEREY
DISTANCES - PRESIDIO to:
CLAYTON 7 Miles — ORD 12.5 Miles
SALINAS 19 Miles
CARTOGRAPH by S-2,-3 section, 11th CAVALRY
Wachtel -7-5-40

national defense program, also directed by Major Howard;

Supervision and instruction of 340 cadets of the Reserve Officers' Training Corps which includes senior cadets of nearly a dozen universities and colleges of the western states, with Lieutenant Colonel R. C. Wyeth, director of training;

Direction of the training of the Corps Area Service Command. The infantry replacement section of 147 officers were trained at Ord; the medical and post administrative sections, of 53 officers, at Presidio of Monterey—all under the direction of Major G. B. Guenther, 11th Cavalry;

In the way of additional duty, organization and basic training of the newly-raised 39th (now 19th) Engineers, numbering 600 recruits, and the 1st Medical Regiment of 200 recruits. The 2d Squadron, 11th Cavalry, commanded by Captain Alexander George, was in charge.

All of the Camp Ord concurrent training was under the general supervision of Major Wayland B. Augur, 11th Cavalry, as camp executive, with Captain William J. Bradley, adjutant.

Other problems of organization and training were injected into an already overcrowded schedule late in June. Colonel Groninger, commanding the Presidio and Camp Ord, was directed to open a recruit replacement center at Monterey during the intensive recruiting period of the army, and at the same time it was announced the new 7th Division would be formed at Monterey and Ord. While primary responsibility of initial training of this latter element rests with the local artillery regiment, the matter of housing and furnishing the base is one directly concerning the cavalry commander and members of his post staff.

Due primarily to the efforts of Colonel Groninger, purchase of 3,667 acres of land connecting with Camp Ord was completed in June. The new strip greatly enlarges the Ord Reservation training area.

With intensive concurrent training of civilian components well under way, directed and supervised by the 11th Cavalry commander, his staff and troops, Colonel Homer M. Groninger's regiment is now preparing for another month in the field—this time as a reconnaissance force for northern troops in the Fourth Army Maneuvers at Fort Lewis in August. Unit training and preparation for the troop movement to Washington late in July, actually a "main effort" activity, comes almost as additional duty for the Cavalry. Unless last-minute developments arise, Colonel Groninger will move two line squadrons, the Machine Gun Troop, regimental headquarters and a portion of the Headquarters Troop to Fort Lewis by rail at the end of the month. Motor elements will make the trip in convoy.

In spite of the tremendous increase in training activity which has arisen since the conclusion of 3d Division maneuvers in May, the regiment has found time to stage a number of squadron gymkhanas and on June 8th a regimental horse show was held on Soldier Field, at the Presidio, with Major Gustav Guenther in charge. Using a double ring, ten classes were shown during the day, with general participation by both novice and expert horsemen. The regimental horse show team also participated in two outside shows, the first at San Mateo, May 31st, and the second at Oakland the week of June 16th-23d. Major Guenther headed a team of five officers at the San Mateo show, bringing back six awards, and Lieutenant Charles M. Iseley and four sergeants took part in the Oakland show, taking four awards.

Just prior to the close of 3d Division exercises each troop of the regiment entered hunt teams in an exhibition ride over the Camp Clayton course staged as a farewell event for Major General Walter C. Sweeney and members of his division staff.

The regiment was saddened May 31st by the death of Corporal Jack H. Foster, of the Machine Gun Troop, who suffered fatal injuries when his horse fell as he attempted to stop a runaway animal at drill. Corporal Foster had been with the regiment for nearly four years, coming here from Centerville, Iowa.

* * *

12th Cavalry—Fort Brown, Texas

COLONEL ARTHUR E. WILBOURN, *Commanding*

During the IX Corps and Third Army Maneuvers, sixteen Reserve officers were with the regiment: Majors George S. Danhour, Cav-Res., and Howell S. White, Cav-Res.; Captains Harold W. Cole, Cav-Res., Luther A. Holmes, Cav-Res., James E. Hubert, Cav-Res., and Carl A. Kah, Cav-Res.; First Lieutenants Richard W. Keith, Cav-Res., Nelson S. Burns, Cav-Res., Walter J. Buboltz, Cav-Res., Louis B. Powell, Cav-Res., Turner R. Ratrie, Cav-Res., Howard M. Steller, Cav-Res., Robert C. Freihube, Cav-Res., Arthur W. Johnson, Cav-Res., Harold A. Patton, Cav-Res., and Oliver W. Orson, Vet-Res.

At the conclusion of the period, all were enthusiastic and felt that maneuvers were the best place to receive their active-duty training.

During the latter part of May, the regiment left the maneuver area around Jasper, Texas, and returned to its home stations. The 12th Cavalry, less 2d Squadron, to Fort Brown, Texas and the 2d Squadron, 12th Cavalry, to Fort Ringgold, Texas.

The 2d Squadron personnel and animals were returned entirely by train, while the remainder of the regiment returned by train and motor.

Maneuvers are of inestimable value in perfecting the functioning of the regiment as a whole, and it is always with a great deal of regret when the troops are separated to return to their home stations.

Upon returning to the home station, a short period for troop housekeeping was taken before starting the training schedule for the completion of range practice and completing the firing of record courses for all weapons.

The target range at Boca Chica has been the scene of considerable activity during the period.

Training is going on in full swing, as the regiment must not only do considerable range work, but must in addition carry on instruction and activity to permit it to start back for maneuvers in August with both men and animals trained and in condition to function properly.

On June 17th a carload of remounts was received from Fort Reno, and put into training as troopers' mounts.

The regiment feels the loss of the temporary duty officers who have been with us starting early in February to the completion of maneuvers. Here's hoping that with all the shifting and moving around that these men will soon be back to the fold.

On May 22d, Lieutenant Colonel Jay K. Colwell left to proceed to his home to await retirement. He is sure to form a new circle of friends in his new environment who appreciate his genuiness and goodfellowship as those of us at Fort Brown did.

On June 15, 1940, Lieutenant Colonel McFarland Cockrill left for duty with the National Guard at Dallas, Texas. Our loss is their gain. Both officers and men will miss seeing the "little man on a great big horse" in the course of the next maneuvers.

* * *

14th Cavalry (less 1st Squadron and Band)—Fort Riley, Kansas

COLONEL A. H. WILSON, *Commanding*

On May 27th the 14th Cavalry, less 1st Squadron, Band, and Troop F, left Fort Des Moines, Iowa, by motor and rail, for permanent duty and station at Fort Riley, arriving on May 29th. Troop F was left at Fort Des Moines to perform necessary guard, fatigue and care taking duties until arrival of the 80th Field Artillery from winter maneuvers. Upon relief by the 80th Field Artillery, Troop F rejoined the regiment at Fort Riley on June 8th.

This move terminated a period of about twenty years duty for the 14th Cavalry at Fort Des Moines. The 1st Squadron remains at Fort Sheridan, Illinois.

On June 12th Headquarters, and Headquarters and Service Troop, less Scout Car Platoon, and a detachment of Machine Gun Troop, Lieutenant Eugene J. White in command, proceeded by motor to Little Falls, Minnesota, for duty with 7th Corps Headquarters, Provisional.

Recent losses sustained: Three officers and 36 enlisted men departed from Fort Des Moines, Iowa, May 24th, for duty with the 7th Reconnaissance and Support Squadron, 7th Cavalry Brigade at Fort Knox, Kentucky.

Six enlisted men were transferred to the Combat Car Squadron, Cavalry School, on June 1st.

Lieutenant Colonel Terrill E. Price to ORC duty, Jacksonville, Florida.

Major George A. Moore to ORC duty, Rutland, Vermont.

Captain Frank O. Dewey to Staff and Faculty, Cavalry School.

Captain Prentice E. Yeomans to Fort Knox, Kentucky.

First Lieutenant David V. Adamson, to Fort Knox, Kentucky.

Second Lieutenant Arthur T. Williams, III, to Fort Knox, Kentucky.

Gains:

Captain Walter Burnside, commanding officer, 2d Squadron and Regimental S-3, joined July 1st.

First Lieutenant Sol B. Gutman, Cav-Res., 1 year active duty, attached to Troop F.

Second Lieutenant Donald H. Wills, Cav-Res., 6 months' active duty, attached to Troop E.

Second Lieutenant Ferdinand T. Schneider, Cav-Res., 6 months' active duty, attached to Troop F.

Second Lieutenant Bert Freeman, Cav-Res., 1 year active duty, attached to Troop E.

The following Reserve officers, with the regiment last fiscal year as Thomason Act officers, have been granted 1-year extension of active duty.

Second Lieutenants Chester H. Dunning, Cav-Res., Eben J. Irish, Cav-Res., Henry R. Hansen, Cav-Res., and Ethan R. Cunningham, Cav-Res.

Recruits—92 have joined between June 19th and 25th.

During the month of June the regiment completed mounted and dismounted pistol firing. The first two weeks of July were devoted to training with and firing the M1 rifle, platoon and troop tactical exercises, recruit training and preparation for participation in impending IV Army Maneuvers in Camp Ripley maneuver area from July 16th to August 18th.

* * *

26th Cavalry (PS)—Fort Stotsenburg, P. I.

COLONEL ROBERT BLAINE, *Commanding*

The 26th Cavalry has been undergoing regular garrison and field training during the past spring and summer months. Two particular training activities merit special remark.

A small force exercise, conducted by the post commander during May necessitating loading and unloading the animals of a rifle platoon (30 horses, including force headquarters horses). The platoons (1 per rifle troop) practiced considerably. The signal "Go" was given with the entire force (including a motorized artillery section and a motorized section of cavalry heavy machine guns) in a shelter tent camp with all equipment displayed in a show down inspection. The motorized troops assisted the cavalrymen somewhat in packing equipment, but these times are considered of interest:

Time to break camp, make rolls, pack all trucks (including kitchen and baggage) load 30 horses, sling the one movable ramp on a truck side and *move out:* Fastest group 5′ 40″; 2d, 6′ 55″; 3d, 9′ 25″ and 4th, 9′ 58″.

Time to detruck (after a portée march) saddle all horses, and move out mounted, using same (one) ramp: Fastest group, 6′ 20″; 2d, 6′ 45″; 3d, 7′ 50″; 4th, 9′ 58″

These times required practice and lots of it—the times recorded by platoons when practice first started came to about 20-25 minutes.

A regimental march was held in May through the Zambales Mountains on the route Fort Stotsenburg—Santa Juliana—Maguisguis—San Juan—Anonang River—Santa Fe—Camp Sanchez—Fort Stotsenburg. The march was made in extremely hot weather over most difficult grades and trails. One day's march was about 27 miles over very rough going. The regiment came through in fine shape.

Polo has just completed a very successful season. There was a round robin post tournament before Christmas, four teams participating. In March and early April, the annual Stotsenburg Spring Tournament for teams limited to 10 goals was held. This is the outstanding polo tournament in the Far East. Teams participated this year included three Los Tamaraos teams, one Manila Polo Club team, one Department Headquarters team. The tournament was won by the Los Tamaraos Greens. The 26th Cavalry was defeated by a goal in the last period by a 9-goal Los Tamaraos red team, but the regiment defeated the 24th F.A., then the Manila Polo Club yellow 10-goal team by a score 9 to 2 (including 4 by handicap) to win the consolation.

Lieutenant Howze and Captain Trapnell played on an army team with Captain Mathews and Lieutenant Combs, from Department, in the Philippine Open Championship. It was a magnificent game with a see-sawing score, played on the flat against the defending champions, the 13-goal California quartet, with Roxas, Andrews, Brown, and Perkins, which won. After the tournament the army players atended a dinner at Malacañan given by President Quezon in honor of the open players.

Captain Trapnell left the regiment about the middle of March, to go on detached service in Manila, which was a bad loss for regimental polo. However, the 26th Cavalry won the Tuazon Cup in February, Langhorne Cup in May, lost the Selph Cup match to the Manila Polo Club by a goal made by the opposition in an overtime period.

The polo season was climaxed by the second annual "Relaxation Day" at Los Tamaraos Polo Club at Manila. The regiment entered three teams in a bicycle polo tournament which included teams from every part of Manila, including two from the Navy. The regiment demolished several bicycles but otherwise was distinguished only by disaster. We had a fine game of regular polo next day which we again lost by a single goal.

The regimental polo squad (handicapped as shown): Major Nelson, Captain Ketchum, Captain Trapnell (2); Lieutenant Howze (3) (team captain); Lieutenants Fleeger, Alger (1), Haines (1), Bartlett, Arnette (1), Lichirie (1), Chandler, Blanning, Walker, and Barker.

During April Fort Stotsenburg held its annual horse show, race meet and polo tournament. The horse show was a great success extending over three days with twenty-five classes. The response of the men of this regiment was highly satisfactory, necessitating elimination classes to reduce the number of entries to a figure consistent with the time schedule. The turnout of horses and riders from Manila was also very gratifying.

Sergeant Tuana, Troop "E," won the cup for amassing the highest number of points in jumping classes by an enlisted man. Sergeant Hulguin, Troop "B," Private Rom, Troop "E," and Private First Class de Ocampo, Troop "A," tied for second place.

The officers' charger class was won by Lieutenant Cornelius A. Lichirie on *Sun River.* Lieutenant Ralph Haines on *Tarzan,* Lieutenant W. E. Chandler on *War Cry,* and Colonel Lucien V. Segundo on *Chief,* placed second, third and fourth.

Sergeant Hulguin on *B-King* won the enlisted men's open jumping, closely pressed by Seregant Tuana on *Nick Tony,* Private Palacio on *Bliss,* and Corporal Montiadora on *Spider.*

In the open jumping Lieutenant H. J. Fleeger on *B-King* took the blue after an exciting jump-off with Lieutenant H. H. Howze on *Nick Tony* and Lieutenant W. E. Chandler on *War Cry* over jumps at 4′ 6″, two of the three horses going clean. Lieutenant J. D. Alger on *Bliss* took fourth without the nerve strain of a jump off.

Miss Jane Honeycutt turned in a beautiful performance to win the hunters any weight on *Sun River* followed closely by Lieutenant Jack Rhoades on Mr. Hickey's *El Gran Capitan,* Lieutenant J. D. Alger on *Bliss,* and Lieutenant W. E. Chandler on *War Cry.*

Other winners: (Blue ribbons only are listed).

Touch and out: Lieutenant H. H. Howze.

Teams of three jumpers: Lieutenant C. P. Walker, Lieutenant J. C. Blanning, Lieutenant H. H. Howze.

Ladies' jumping: Mrs. H. H. Howze.

Ladies' hacks—Miss Jane Honeycutt.

Handy hunters—Lieutenant Chandler.

Hunt teams—Lieutenants Alger and Chandler, and Captain Hugh Stevenson.

* * *

61st Cavalry Division Field Test

By Mark M. Wohlfeld, First Lieutenant, 304th Cav-Res.

Sunday, June 9, 1940, marked the fourth annual field test carried out by the officers of the 61st Cavalry Division at the Round Hill Stables, Greenwich, Connecticut. The course, covering sixteen miles of wooded terrain was bisected by streams, natural hazards, and placed barriers; the latter attended by jump-stewards to check the riding performance of each individual competitor negotiating that obstacle.

Presiding judges were: Lieutenant Colonel Edwin O'Connor, Lieutenant Colonel John F. Coneybear, Major Kent C. Lambert, and First Lieutenant George C. Thomas, all of the 61st, who selected the mounts and course for the test from Mr. Theodore F. Wahl of the Round Hill Country Club Stables and determined as Chief Steward, Captain Leon K. Kurland of the 304th Cavalry.

Subsequent score-rating, by the above, was based on points to aggregate a total of one hundred, allotted as follows: Time—38 points; condition of mount—38 points; special situation—8 points; jump performance—16 points; the special situation entailing a personally written submission describing the location of various terrain features encountered during the ride.

The weather, the afternoon of the event, was sultry with rain imminent; however, the clouds miraculously withheld their downpour and team assignments proceeded with routine efficiency and quickness, the competing officers lining up outside the stables drawing lots for horses from out the crown of an inverted campaign hat. That formality attended to, the respective teams assembled mounts in the corral, studied their course maps and at the "Move Out" signal departed at timed intervals to prevent the formation of a closed column or a crowding of riders at the jumps.

Then, for the next two hours the woods resounded with hoof beats and snapping twigs and branches. When the leading team finally emerged from the wooded section nearest the last obstacle, the two hundred officers' guests sprang to their feet and cheered the winners; camera-toters flicking off angle shots of the lathered horses and riders as they thundered on past the clearing to complete the prescribed grind by leaping the final barrier.

The prime award for team honors was the Stack Trophy, Blue Ribbon and Leather Toilet Kits, presented by Mayor Frank Stack of Norwalk to the riders of the first team of the 304th Cavalry won by: Captain H. G. Stack, First Lieutenant F. de Angelis, and Lieutenant E. T. Little, scoring a total of 256 points. Of the teams following, each placed in order and was awarded the prize ribbon appropriate: Second: First Lieutenant H. B. Hawley, and Lieutenants F. W. Schweikart and S. G. Lederer, of the 461st Quartermaster Squadron, 254 points. Third: Captains F. J. Culley and W. W. Kilbourne, and Lieutenant J. D. LeVien, 303d Cavalry, 249 points. Fourth: Captain H. Disston and First Lieutenants J. C. Elliott and W. H. Bell, 304th Cavalry, second team, 240 points. Fifth: Captains F. G. Siewers and R. F. Clapp, and First Lieutenant J. J. Marron, 302d Cavalry, 239 points.

Individual class awards went to: First place: Captain F. J. Culley, 303d Cavalry, Blue Ribbon and leather wallet. Second place: First Lieutenant H. B. Hawley, 461st Quartermaster Squadron. Third place: Captain Lionel Lippmann, 304th Cavalry. Fourth place: Lieutenant E. T. Little, 304th Cavalry.

* * *

112th Cavalry—Dallas, Texas

COLONEL CLARENCE E. PARKER, *Commanding*

Our new regimental instructor, Lieutenant Colonel Mc-

Farland Cockrill reported on July 1st, to take over the supervision of the training of this organization. The 1st Squadron has a brand-new adjutant, Second Lieutenant Howell H. Watson. Lieutenant J. Hardy Neel has been promoted to first lieutenant.

All units have been working enthusiastically in preparation for the three weeks' encampment in August. Each organization has spent at least two week-ends on overnight exercises. All troops are, and have been for sometime, at full strength. In so much as a great deal of interest has been evidenced by the public and the press in the National Guard, all applicants for enlistment have been put on the inactive list. Headquarters Troop has offered recruit and specialist training, without pay, of course, to the inactives. When publicity was given this policy, one inquiry came from a lady who was very anxious to learn horseshoeing. She was quite disappointed to find that the plan was not co-educational.

The regiment has completed the firing of small arms and all the men are keen to try their skill in combat problems at camp. Better than usual scores resulted from more intensive preliminary instruction.

The natives in the vicinity of Headquarters Troop have been disturbed in the early mornings by the sound of thundering hoof beats. Major McIntyre and Chaplain Smith are on their annual training spree.

305th Cavalry—Philadelphia, Pennsylvania

Colonel Vincent A. Carroll, *Commanding*

Since early in May, the Wednesday noon luncheons have been devoted to discussions of the European situation. Colonel Chapin's cryptic comments serve to clear up to some extent the dizziness one gets after wading through a maze of news reports.

Major Dean and Captains Tom Meehan and Doug Morrow have returned from the spring maneuvers in Louisiana and Texas. Despite their wild tales of hardship and suffering and of night marches for miles and miles, we have never seen that particular trio in a more perfect state of health than after their return. Evidently there is some good in the Spartan existence after all. We are sure that they profited from their experiences and the regiment to a man, is looking forward to participation in the First Army Maneuvers in August. A last-minute drive on extension course work pushed the remaining few over the eligibility line and practically the entire regiment from Colonel Carroll down will be heading for northern New York in a few weeks.

Lieutenant Gene Mohen upheld the 305th reputation at Fort Riley by topping the class at the Cavalry School in the light machine gun and the M-1 rifle. He was just nosed out of first place with the heavy machine gun and he qualified at the mounted pistol. Looks like Gene is a fair shot. Just to prove that shootin' wasn't his only claim to excellence, Gene took two white ribbons; one in the Fort Riley Memorial Class at the Spring Horse Show and one in the Jumping Class of the Graduation events. From the intellectual side, the records show that he did not receive any U's in the course and when Golonel Wilson (ex-Unit Instructor, 305th Cavalry) congratulated him after he received his diploma it was genuine pride that he felt in the achievement of one of his boys.

Colonel Wilson's 14th Cavalry has been moved to Fort Riley and is being partially mechanized. It is also reported that Colonel Wilson is recovering from several broken ribs received while playing polo (in a combat car, Colonel?).

Lieutenants Sol Gutman and Bert Freeman have been ordered to Fort Riley for extended active duty with the 14th Cavalry.

The regiment is holding a pre-camp dinner late in July before embarking for the war in the north.

306th Cavalry—Baltimore, Maryland

Colonel Matthew F. James, *Commanding*

The feature of the recent conferences of the Washington units was the one held on June 6th. At this conference, all officers who attended the recent maneuvers in Louisiana spoke on their experiences during this period. An unusually large number of officers attended this conference and all who attended gained valuable knowledge from these officers who had recently returned from field training. Other conferences had as their purpose a refresher of those fundamentals that will be most beneficial in active duty training this summer. Officers of the regiment are looking forward to training of the C.M.T.C., training with the mechanized Brigade at Fort Knox, and the August maneuvers in New York.

The last ride of the year was held on June 2d, with Major Edward Kane in command. About thirty officers had a cross-country ride with many jumps and slides to make a most enjoyable ending to the inactive status training season.

Medals were recently presented to members of the Cavalry pistol team. This team finished second among Reserve officers of the other arms and services in matches fired during the winter and spring. Members of the regiment have been engaged in rifle practice at the Quantico under the team captain, Lieutenant Robert W. Castle, a former National Intercollegiate Rifle Champion.

In Baltimore, Colonel Bruce Palmer talked on "The Estimate of the Situation" and "Orders." Lieutenant Covington lectured on "The .50 Caliber MG and the 37-mm. Gun." Major Thomas H. Mundy and Lieutenant Roland Wockenfuss had the conference on "Cavalry Drill" and at this same conference movies of the regiment in summer training and horse shows for the past few years were also shown. The regimental chaplain, Percival M. Ferne, talked on his experiences in the World War and gave his impressions of the present conflict. Chaplain Ferne was originally in the Royal Naval Flying Corps and at one time the present King of England was attached to his unit. Later the chaplain commanded a company of tanks in their first use in the World War.

It is with deep regret that we see our Unit Instructor of the past two years leave us. Lieutenant Colonel J. L. Philips was recently assigned to the office of the Assistant Secretary of War. Our best wishes go with him in his new assignment and we hope that he will continue to be with us whenever he may find the opportunity.

Recent assignments to the regiment are: Captain Carroll W. Arford; First Lieutenant James W. Jacobson; and Second Lieutenants Bruce S. Branson, Jr., Richard D. Daugherity, Jr., Frank W. Hoover, Jr., Harry W. Lane, Donald L. May, Earle W. Mitchell, James M. Moser, Jr., Richard K. Preston, Ferdinand T. Schneider, Jr., Frederick R. Smith, Alfred B. Stansbury, and Oliver M. Walcott; and Private Elmer J. Neary.

Relieved: First Lieutenants John E. Fissell, Jr., Carl W. Mumm, Isadore L. Singer; Second Lieutenants William E. Burton, John S. Higgins, Jr.

Resigned: Second Lieutenant Robert A. Barthel.

* * *

316th Cavalry Camp, June, 1940

By Captain Philip W. Tiemann, 316th Cavalry

"By direction of the President, the following named Reserve officers, with their consent, are ordered to active duty—"

So read the orders which assembled 142 Reserve officers of the 316th Cavalry and associated regiments of the 1st Corps Area for 14 days of training at the Fort Ethan Allen military reservation. During June 9th, the "travel day," the old-timers (to which classification were tentatively admitted veterans of at least one previous camp) flocked in. That same afternoon they submitted with what dignity they could to (1) standing about in a cold drizzle sans everything but slickers while awaiting (2) the critical scrutiny of a group of medical officers who, quite impersonally, managed to get extremely personal. On this occasion the blood pressure of several of our most valued associates was noted to increase alarmingly under the threatened necessity of a check-up the next day ("We're growing old, boys"), but practically everyone got by. Two days later the "rooks" from Massachusetts State and Norwich arrived in force, reinforced by a couple from Pennsylvania Military—all a likely-looking group which justified first impressions by attention to business and all-around efficiency.

The situation in Europe lent unusual gravity to this year's training, and perhaps was partly accountable for the smoothness with which all phases were accomplished. However, the names of those in command were sufficient advance notice of a successful camp. Lieutenant Colonel H. C. Thomas acted once more as regimental commander, ably assisted by Lieutenant Colonel C. H. Griffith. Majors Andrew Barr, Jr., J. E. Baird, and J. E. Davisson were in command of the three provisional squadrons. Captain N. W. Ellis performed the arduous duties of regimental adjutant, while Major F. T. Manross as S-3 formulated and conducted several instructive tactical problems. At the end of the first week, the 3d Squadron was pleased to receive back its CO, Major John Brainerd, who had just completed the Command and Staff course at Fort Leavenworth.

In a supervisory capacity Colonel Guy Kent, Major Thomas J. Heavey, and Major George Moore, all of the regular army, were helpfully critical. Major Heavey made the subject of machine guns come to life with practical demonstrations and instruction, and gave a "rainy day" talk on mechanization which more than made up for the ride which was missed.

On the whole the weather was unusually favorable to an active schedule. The horses were good (could this be the reason why there were so few candidates for the honorary (?) Order of King Richard as conferred by the New England cavalry?). Also, the writer heard remarkably few grouses about the mess, so it must have been better than average.

With this favorable basis, everything went well. Of course the first week had to be devoted to shaking down and to refamiliarizing everyone with military procedure, and there was the ever-present disadvantage of working with a private-less army. However, that part of the schedule developed gradually into practical and interesting problems dealing with reconnaissance, attack, delaying action and so on, leading up to an all-day march on Thursday, June 20th, which latter maneuver brought out clearly the necessity of proper security measures at all times.

This particular day, the 20th, was in turn climaxed by the annual regimental party, for which occasion the steamer *Ticonderoga* was chartered for a moonlight sail on Lake Champlaine. Anyone familiar with such occasions can picture the festivities.

Another high spot was the morning spent firing the new M-1 (Garand) rifle, the mechanical details of which had previously been mastered. Added to pistol practice, dismounted and mounted, and firing both heavy and light caliber .30 machine guns (a few even got in some shots with the .50), the work with the M-1 rounded out the regiment's training in the use of modern cavalry weapons.

The regiment broke camp with the feeling of having had an excellent freshener course, tinged by grim realization of the possibility that there might be need for practical application of its professional knowledge before time for another summer camp rolls around.

☆ ☆ ☆ ☆

Book Reviews

THE ART OF MODERN WAR. By Herman Foertsch, Colonel of the German Staff. Veritas Press, 1940, New York. 273 pages. $2.75.

This translation by Theodore W. Knauth, with an introduction by Major George Fielding Eliot, is most timely. Clear, succinct, direct in his treatment, the author exposes some of the fundamentals of Blitzkrieg—the synonym for the German military strategy and tactics of today. Written before the war began there are several statements which now, obviously are questionable, however, much of it appears as if it were an authoritative commentary of present-day events.

While the discussion for the most part deals with theory and technical considerations, section "D" of Chapter XVIII deals specifically with cavalry and reconnaissance. For example:

". . . reconnaissance from the air has its drawbacks. What it brings is a series of snap shots, and not continuous observation. It can determine where the enemy happens to be marching, where he is resting, and where he is in action, but it can frequently not make out where there is no enemy, and this may be of great importance for the command. It can also not always determine the strength of the enemy, and in spite of all technical advances, it is not in a position to operate at night and in foggy weather.

"Air reconnaissance will therefore have to be supplemented by terrestrial observation. It is only the latter that can determine finally if a district is free of the enemy. It alone, by questioning prisoners, examining the dead, and in other ways, can furnish evidence about the organization and distribution of the enemy forces, can maintain contact with the enemy, and can observe details of his disposition and strength."

"Tactical reconnaissance and in part combat reconnaissance also, which keep the command supplied with evidence of what is going on, will be carried out by scouts who speed on ahead of the respective fighting units. They must, therefore, depending on the marching speed of these units, themselves be fast enough to get sufficiently far ahead of them. The reconnaissance forces of motorized and mechanized units must therefore themselves be motorized, while, in the case of units that advance on foot, this will not necessarily be the case. Still, the demand for full mobilization is becoming increasingly urgent. Motorized reconnaissance vehicles which are used in action must of course be able to move freely over open country.

"So long as the ability to move through open ground remains limited, the horse, as a means of locomotion, cannot be dispensed with for reconnaissance purposes. A horseman can still move over ground that is impossible for motorized vehicles. He has the further advantage that his vision and his hearing are not impeded by being confined to slits in his armor protection, and by the noise of his own advance. There has been much improvement in construction here, and it may occur that the neighing of a horse will be louder than the noise of a motor.

"Reconnaissance is in the first place a matter of seeing and observing. This can frequently not be obtained without fighting. It will happen often that the strength of the enemy, his occupation of some locality or place, or the presence of a screening force, can only be determined by attracting his fire. The reconnaissance forces will frequently be called upon to tear through a protective screen, or to penetrate a weak point, in order to obtain from the ground a view into the opponent's depth. Therefore, reconnaissance units are also fighting formations which can solve such problems by their own power. Their organization varies in accordance with their duties—armored cars, motorcycle sharpshooters armed with infantry weapons, small motorized cannon, and antitank guns, will form motorized reconnaissance units, which again, strengthened by artillery, tanks, and more motorized infantry, can form large operative reconnaissance units. Cavalry and bicycle troops, with the same or similar auxiliary weapons, will be organized as mounted reconnaissance units. Engineer troops are indispensable for both, to overcome obstacles and undertake destructive operations."

To any leader, *The Art of Modern Warfare* contains much that is worthy of serious reflection. Every American officer should take time out and read it. F. S. J.

* * *

HAITI AND THE UNITED STATES. By Ludwell Lee Montague. Duke University Press, Durham, N. C. 308 pages. $3.00.

Unquestionably this volume, written in superior literary style, is the most comprehensive exposition of Haitian-American relations in current print. The author, an assistant professor of history in the Virginia Military Institute and a captain of Cavalry Reserve, presents an insight derived from former residence in the tropics and from military associations. The whole course of Haitian-American relations covering more than two centuries, forms the background for the author's timely conclusions relative to Haiti's strategic location and interests. His succinct treatment of the Monroe Doctrine immediately clarifies the situation in one's mind in our consideration of the present European tragedy. The volume contains a foreword by J. Fred Rippy, Professor of History, University of Chicago, and a preface by the author and is documented by an extensive bibliography.

For all who are interested in the Gulf-Caribbean area, this book is highly recommended. F. S. J.

Timely Books of Professional Value

Cavalry Combat	$2.50
Cavalry Field Manual, Volumes I, II, and III	.75
Combat Communications, *Allen* (3 for $1.00)	.35
Combat Intelligence, *Schwien*	2.00
Company Administration and Personnel Records, *Virtue,* Paper (In lots of 5 or more $1.00 each)	1.25
Cloth	1.75
General Staff Officer's Notes, *Hones*	2.00
Machine Gunners Manual, Plain	1.75
With Flap, Map Pocket and Slate	2.25
Manual of Administration for the CCC, *Warren*	.75
Map Reading, Sketching and Aerial Photographs, Paper	1.00
Cloth	1.25
Leatherette	1.50
Modern Military Dictionary, *Garber,* Cloth	2.50
Leatherette	2.75
New Infantry Drill Regulations	.50
Officers' Guide, 3d edition, new	2.50
Reconnaissance, *Allen* (3 for $1.00)	.35
S-2 in Action, *Thomas*	1.50
Soldier's Handbook	.50
Tactics and Technique of Cavalry Basic, 9th edition	3.50
Advanced, 1st edition.	5.00
Verdun	2.50

See Inside Front Cover for Other Books of Timely Interest. 10% Discount on Orders Amounting to $10.00 or More.

All Prices Include Postage

The Cavalry Journal

1624 H Street, N.W. Washington, D. C.

SEA OF DESTINY. By H. Dyson Carter Greenburg. New York. Price $3.00.

Reviewed by Major James R. Randolph, Ord-Res.

The possibility of a Blitzkrieg in the wheatfields, and that the Nazi invasion of the United States may begin in North Dakota, is suggested by the author's study of the strategic importance of Hudson Bay, which he calls "Our Undefended Back Door." Before the days of railroads this was known. For whoever held Hudson Bay was in a position to cut off, either for purposes of war or trade, those who attempted to reach the prairies from eastern Canada. At one time the Hudson's Bay Company claimed most of the western part of what is now the United States.

Early explorers rated Hudson Bay one of the most valuable parts of the continent. But it was early given as a private monopoly to a small group of men, whose heirs for nearly two centuries were content to exploit it for furs, neglecting its more valuable resources. This, together with the opposition of commercial interests in Montreal, held back the development of the Hudson Bay route, and has caused the vast wheat crops of the prairies to be shipped to Europe by way of the Great Lakes.

Since the last war, however, a railroad has been built to Port Churchill, and wheat is being shipped to Europe that way. Rail and sea journeys are about the same as by the Great Lakes route, but the whole 1,100-mile trip through the Lakes is saved. Because it is salt water with forty-foot tides, Hudson Strait has a longer navigation season than the Great Lakes, although it is so much farther north and is never entirely free of floating ice.

But along with its commerce, its defense has been neglected. It would be a simple matter, as things are now, for an enemy to seize and fortify the Strait, capture ports on the Bay, send armies into the prairie provinces, and send swarms of bombers down to raid the great cities of the United States, which lie only a few hours by air from bases the enemy could easily hold for as long as he needed them. And the Nazis know this. They have been very active in mapping the region, studying details of invasion, and making preparations for "fifth column" activities.

Seizure of the Bay would also give them enormous undeveloped oil supplies, and would open up a vast and fertile new land to settlement—a land the English-speaking peoples have neglected too long.

* * *

THE HUNTING RIFLE. By Colonel Townsend Whelan, O.D., Retired. Stackpole Sons, Harrisburg, Pennsylvania. 458 pages; 88 illustrations. $4.75.

This is a highly technical and authoritative volume which gives the basic principles relating to rifles, ammunition, and the flight of bullets, in language readily understood by the layman. It is the answer to the big-game sportsman's prayer. It deals primarily with the modern American hunting rifle. Colonel Whelan, with the background of an army ordnance officer, has had a lifetime of experience in instructing in the technique and shooting of the rifle. His text is remarkably clear and practical. He has hunted with the rifle throughout North America from the tropics to the Arctic.

This book is predestined to become the standard treatise on this subject.

F. S. J.

* * *

MOBILIZING CIVILIAN AMERICA. By Harold J. Tobin and Percy W. Bidwell. Council on Foreign Relations. New York. 278 pages. $2.75.

At a time when one is constantly confronted by talk of the European political situation and of our army expansion to meet possible threats to our American form of government, we naturally wonder about the complexities of possible conscription of men for military and industrial service; control of public opinion through censorship and propaganda; control of prices and production; government operation of transport and communication facilities; and the taxation of war profits. In this straightforward account by Professors Tobin and Bidwell one can find all of the answers to such questions and what war would mean to civilians here at home. This is not a chronicle of the current news but the reasons back of the news. In brief, it offers a complete record and authoritative interpretation of events in the international field and thoughtful opinion regarding the underlying causes.

In the foreword Major General Frank R. McCoy, Retired, declares that *Mobilizing Civilian America* should be helpful to members of Congress and gives a lead for proper consideration of the whole question by the public.

A full yet critical bibliography contains a valuable and timely list of pertinent books, United States Government publications and periodicals.

This book is the fruit of more than two years research among material not ordinarily accessible. It stands alone in its field.

F. S. J.

* * *

THE CUSTER FIGHT. Arranged by E. A. Brininstool. Privately published. Hollywood, California. 30 pages. $1.00.

This is Captain F. W. Benteen's own story of the Battle of the Little Big Horn, June 25-26, 1876. Captain Benteen was senior captain in Custer's regiment, the famous 7th Cavalry. Much of the account is from his own testimony at the Reno Inquiry, supported by his private papers.

Students of the Battle of the Little Big Horn will find much of interest in this abbreviated account—"by the men who were there."

F. S. J.

* * *

M-DAY (If war comes, what your government plans for you). By Donald Edward Keyhoe. E. P. Dutton and Company, New York. 96 pages. Price $1.00.

M-Day discusses in narrative form the manner in which prospective legislation will affect the procurement of supplies and equipment in war. It is not so much a dissertation of the legal instrument which will be enacted into law

AMERICAN
RED CROSS

Red Cross activities on the far-flung home front are made possible by the organization's memberships. Annual dues, voluntary contributions and gifts are its sole sources of funds.

The Red Cross charter specifies aid to men of the armed services as one of the organization's obligations. Last year some 40,000 men in the Army, Navy, Marine Corps, and Coast Guard, or their families, were assisted by the Red Cross, either through its field directors, chapter workers or, in cases of illness, through trained hospital social workers.

Expansion of the Nation's armed forces means an expansion of Red Cross duties. To continue its services, to expand them as necessary, and to be prepared to meet emergencies, the Red Cross needs every possible member. Join a local chapter during the annual Roll Call, November 11 to November 30.

Army Mess Management Simplified

Major E. A. Hyde, U. S. Army

★ The title of Major Hyde's book describes its scope and purpose. It simplifies the Management of the unit mess, it reduces the labor in connection with it, and if the system is carried out, a SUPERIOR MESS will be the result. Every directive is based on practical experience and the failures have been eliminated.

The basic scheme of the book is the use of a 15-days' Bill of Fare. Each Bill of Fare is followed by instructions and recipes for each of the items included in it. All the Company Commander has to do is to prescribe that the Bills of Fare be followed out in his kitchen, turn a couple of copies of the book over to his kitchen crew, and then inspect to see that the plan is being followed and the food is properly prepared and served in accordance with the directions.

In use in a thousand kitchens of the Regular Army and C.C.C.

Specially Adapted to the Field Training period of the National Guard.

Price $2.00 Postpaid

Order Through

THE CAVALRY JOURNAL

1624 H Street, N.W. Washington, D. C.

Departmental Texts

THE CAVALRY SCHOOL

A compilation of the latest matter contained in Basic Field Manuals, Training Regulations, School Texts, Etc.

CAVALRY WEAPONS AND MATÉRIEL, Vol. I:
General Subjects, Light Machine Guns, Musketry and Combat, Packs and Harness **$1.10**

CAVALRY WEAPONS AND MATÉRIEL, Vol. II:
Heavy Machine Guns, Special Purpose Weapons, Moving Targets **$1.10**

CAVALRY WEAPONS AND MATÉRIEL, Vol. III:
Demolitions, Radios, Motor Vehicles.. **$1.10**

TACTICAL PRINCIPLES AND LOGISTICS FOR CAVALRY:
Tactical Principles (Horse Elements), Tactical Principles (Mechanized Elements), Logistics **$1.00**

HORSEMANSHIP AND HORSEMASTERSHIP:
Education of the Rider, Education of the Horse, Animal Management, Horseshoeing, Horse Shows, Race Meetings, Hunter Trials **$1.25**

METHODS OF COMBAT FOR CAVALRY:
Dismounted Actions, Mounted and Combined Actions, Mechanized Actions....... **$1.25**

A MANUAL OF EQUITATION .... **$ .95**
(Translated from the French)

ANIMAL MANAGEMENT .... **$ .95**
(Translated from the French)

THE GAITS—The Horseman .... **$ .95**
(Translated from the French)

SEATS, GAITS, REACTIONS .... **$ .95**
(Translated from the French)

ALL PRICES INCLUDE POSTAGE

Order Through

THE CAVALRY JOURNAL

1624 H Street, N.W. Washington, D. C.

as it is the results of such law on the personal and corporate life of industry in America. The use of charts affords considerable help in visualizing the far-reaching extent to which government will influence all phases of national life. The author emphasizes chiefly the methods which will be utilized to inspire and compel adherents to and compliance with all legal provisions. Measures taken to cope with espionage and sabotage are covered in an effective fashion. This book is of interest and importance not only to the civilian part of industrial America, but is of considerable interest to the man in uniform.

C. S. K.

* * *

"OLD BALD HEAD" (General R. S. Ewell). By Percy Getling Hamlin. Shenandoah Publishing House, Inc., Strasburg, Virginia. 212 pages.

This biography of General Ewell presents an unbiased picture of a man and soldier. Beginning with the influences of his early life in Virginia, the narrative follows the course of his twenty years active service with the Cavalry on the western frontier, gives an account of his early days and campaigns with the Confederate Army, and finally recounts the tragedy of his return to command with the Confederate forces after the loss of a leg and the physical debility which reacted inevitably on his competence as a commander.

This book represents considerable research and quotes at length from a great variety of personal letters and documents written at the time. The author seeks to find the physical and psychological causes and reactions within an individual that effected the efficiency of an army and therefore left a decisive influence upon the course of history. Dr. Hamlin says in his preface, ". . . the strange mischances that sometimes overtake armies may be directly due to the proportion of these qualities in their generals." With this in mind, the reader gets a realistic and unbiased picture of General Ewell and his influence upon the course of Confederate Arms.

C. H.

* * *

RIOT CONTROL BY THE NATIONAL GUARD. By Lieutenant Colonel Sterling A. Wood. Military Service Publishing Co., Harrisburg, Pennsylvania. 191 pages. Fabcote binding, $1.50; Buckram, $2.00.

There has long been needed a text devoted to the subject of riot control in which the essential factors are consolidated in a single volume. Colonel Wood has achieved this purpose in a very effective manner. A tabulation of the subjects covered best affords an idea of the extent to which the problems of riot control have been covered. These subjects are: Psychology of Crowds and Mobs, Legal Authority of Troops, Weapons, Applicable Tactical Principles, Tactical Formation, Preliminary Preparations, Illustrative Problems. This volume constitutes valuable source material and concrete suggestions for all who are interested in this subject.

C. S. K.

Foreign Reviews

CAVALRY ARTILLERY. By G. Sokolov, Artilleriski Zhurnal, January, 1940. Reviewed in the Rivista di Artiglieria e Genio (Rome), May, 1940.

In this article the author maintains the necessity of assigning to the cavalry some artillery units: a necessity the more manifest as the success of any action carried out by the former can not be guaranteed except with the support of the latter.

After referring to the fire actions which the artillery will have to perform in favor of the cavalry (neutralization, destruction, barrage and counterbattery), to the number of units to be employed and to the procedures to be followed for the execution of a determinate task, the writer furnishes a few data regarding the possibilities of the arm.

To this end he assumes the availability of two battalions, each composed of two batteries of 76.2-mm guns (practical range, 6-8 km) and one battery of 122.3-mm howitzers (practical range, 6-7 km): a total of 16 guns and 8 howitzers. Calculating that the duration of the fire is 1½ hours (exclusive of 30 minutes for adjustment), in this time, inclusive of pauses, each gun will be able to fire an average of 120 projectiles and each howitzer 90. Granting with the author that the neutralization of a located "fire center" requires 25-30 projectiles of 76-mm and 18-20 projectiles of 122-mm, it follows that the two battalions in 1½ hours will be able to neutralize 120 such fire centers.

Thus, for example, again according to the author, assuming that the cavalry is operating against infantry organized for defense on a front of normal extent and the fire centers previously disposed by a battalion on a frontage of about 2 km are the following: 40 to 45 machine guns, 20 antiaircraft guns echeloned on 2 or 3 lines to a depth of 3 km and 20 other objectives of various sorts (an average of 40 fire centers to each kilometer), the two artillery battalions will be able to batter and neutralize the hostile fire centers on a frontage of 3 km.

In reality, not all the fire centers will be capable of being located: for an enemy well organized on the defensive, the number will not exceed 60 per cent. In actions against units of cavalry or infantry drawn up on extensive sectors, the number of objectives will be less by 30 to 50 per cent, and then the two battalions in question will be able to operate on a frontage of 4 to 6 km.

The author refers also to the missions which the artillery must accomplish in the preparation and during the first phase of an offensive and to the action carried out in favor of the tanks against antitank guns already located or which disclose themselves during the advance. The tanks will have to be supported to the greatest distances possible, the fire will be adjusted by means of colored smoke projectiles, and the liaisons will have to be assured by some means or other, preferably radio.

* * *

THE ARMED FORCES OF TURKEY. (Le forze armate turche.) Abstracted from La France Militaire of February 15, 1940, by the Rivista di Artiglieria e Genio (Rome), May, 1940.

We reproduce the following data on the armed forces of Turkey:

Army: The peace-time strength is made up of 198,000 men and 20,000 officers. It comprises 10 army corps, which in turn are grouped into 3 armies.

Each army corps is composed of 2 divisions of infantry, 1 regiment of cavalry, 1 regiment of heavy artillery, 1 battalion of engineers, 1 transport battalion, 1 auto battalion. Each division is composed of 3 regiments of infantry and 1 regiment of field artillery.

To the ten army corps must be added 5 divisions of cavalry, 3 mountain brigades, 1 brigade of fortress infantry.

All together:

Infantry: 60 regiments in addition to 6 of mountain infantry.

Cavalry: 12 division regiments, 9 corps regiments, 8 reserve regiments.

Artillery: 9 corps heavy regiments, 18 field regiments, 7 fortress heavy regiments, 16 antiaircraft batteries, 2 special heavy battalions, 3 motorized sections.

Engineer Corps: 9 signal battalions, 9 auto battalions, 1 company of light tanks.

Aviation: 3 regiments, each of two reconnaissance and 1 pursuit battalion (groups). A total of 400 machines and 8,000 men.

The mobilizable forces of Turkey, with a population of 16,200,000, would seem to amount to about two million men.

* * *

STRENGTH AND CHARACTERISTICS (ORGANIZATION) OF THE SOVIET ARMORED AND MOTORIZED TROOPS. (Die Panzertruppe, September, 1939.)

Even if it is not possible solely on the basis of meager press reports to draw an exact picture of the war potential of the Soviet armored troops, the considerable number of armored vehicles possessed by Russia (about 10,000) compels one, nevertheless, to conclude that the organization of numerous armored, mechanized, and motorized units has either already taken place or is at least in process of execution.

According to items in the foreign press (Polish and Russian, especially), these units appear to have been the following at the beginning of 1939:

a) armored divisions, at the disposal, as reserves, of the High Command (GHQ);
b) 9 *separate armored brigades,* also, at the disposal of GHQ as reserves;
c) 23 *tank regiments,* composed of 2-3 battalions each;
d) *13 separate tank battalions;*
e) *12 separate amphibian-tank companies;*
f) *1 tank company* per infantry regiment;
g) 5 *motorized infantry divisions.* (Since this was the situation at the beginning of 1937, it must be assumed that their number has by now been augmented.) A tank battalion of three companies is assigned to each division;
h) 9 *mechanized brigades;*
i) an indeterminate number of *motorized brigades;*
j) motorized scout unit per infantry division;
k) *1 battalion of* (about 50) *light tanks* per infantry division;
l) *1 mechanized regiment* per cavalry division;
m) an indeterminate number of *motorized frontier divisions;*
n) *Schools.*

The armored division includes:

a) *headquarters;*
b) *scout brigade;*
c) 2 or 3 *mechanized brigades;*
d) *1 motorized artillery regiment;*
e) *1 motorized antiaircraft unit* (3 batteries);
f) *1 motorized engineer battalion* (2-3 companies and a pontoon section);
g) *1 communication unit;*
h) *1 bombing-plane section* (12 craft);
i) *1 motorized battalion* for road constructions;
j) *1 ammunition-supply unit.*

COMPOSITION OF THE VARIOUS UNITS

a. Mechanized Brigade:

1 *tank battalion* (4 companies of 3 platoons each) with 5 tanks;
2 *rifle battalions,* each of 3 rifle companies (3 rifle platoons and 1 heavy machine-gun platoon), 1 machine-gun company (2 heavy MG platoons on motor trucks and 1 antitank platoon with 47 and 57-mm gun);
1 *motorized battery;*
1 *motorized engineer company* with pontoon columns.

b. Scout Brigade:

1 *motorized infantry battalion* (3 companies of 150 men each);
1 *tank battalion* (3 companies, each of 12-16 tanks or armored cars);
1 *tank battalion* (3 companies on 15 cars);
1 *armored-car company* (3 platoons on 4 A.C.);
1 *motorized artillery unit* (2-3 batteries).

c. Motorized Artillery Regiment:

Headquarters;
2 Howitzer Units (each of three batteries);
2 Gun Units (each of three—105 batteries).

d. Communication Unit:

Headquarters;
1 *liaison section* for contacts with aviation;
1 *radio company;*
1 *airplane section* (5 planes);
1 *motorcycle section.*

e. The Attack Armored Division:

The *assault unit* (3 battalions, 6 motorized rifle battalions, and airplane squadrons of 24-36 bombers and chasers;
The *fire unit,* consisting of 6 heavy machine gun companies, 6-9 light field batteries, 3 heavy field batteries, 3 antiaircraft batteries.

f. The Independent Armored Brigade:

Headquarters;
scout unit (3 companies);
3-4 tank battalions (3 companies);
1 *artillery unit;*
1 *auxiliary airplanes section;*
1 *engineer unit* (liaison section);
highway patrol;
service unit;
reserve vehicles and personnel.

g. The Autonomous Tank Battalion:

Headquarters, with 1 scout platoon, 1 liaison platoon, and 1 antiaircraft section;
3 *tank companies* of 3 platoons, each platoon having 4 tanks;
1 *accompanying battery* (motorized carriages);
1 *engineer section;*
1 *specialist company;*
service unit.

h. The Motorized Scout Unit in the Infantry Division:

Headquarters;
1 *armored-car platoon;*
2-3 *scout-car platoons,* 1 bicycle platoon;
1 *motorized battery* of three 76-mm pieces;
1 *motorized rifle company* (on motor trucks and with motorcycles;
1 *motorized machine-gun company* (6 heavy MG's on motor trucks;
1 *motorized engineer platoon* (on motor trucks);
1 *communication section* (2 radio posts on motor trucks);
1 *antigas section,* on motor trucks.

i. The Tank Battalion in the Infantry Division:

Headquarters;
1 *scout company;*
3 *tank companies* (each with 15 scout cars);
1 accompanying battery.

War Department Changes

Cavalry Personnel

(From June 1, 1940 to August 3, 1940)

Colonel Oscar Foley, to Jacksonville, Fla.

Colonel Robert M. Cheney, prior orders revoked, to N.G. Affairs, Hq., 9th CA, Pres. San Francisco (Calif.).

Lieutenant Colonel Rexford E. Willoughby, to 3d Cavalry, Ft. Ethan Allen, Vt.

Major James B. Patterson, to Hq., 9th CA, Pres. San Francisco, Calif.

Major James S. Rodwell, to GSC, Hq., 5th Div., Ft. Benjamin Harrison, Ind.

Major Harry W. Benson, to Cannon City H. S., Cannon City, Colo.

Captain Harold McC. Forde, to 1st Cav. Div., Ft. Clark, Texas.

Captain Paul A. Disney, to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant Robert H. Bayne, to 7th Cav. Brig., Ft. Knox, Ky.

Colonel John D. Long, retired, 30 Sept., for age.

Colonel Emil P. Pierson, to 2d CA, New York, N. Y.

Colonel Cuthbert P. Stearns, to duty as Cheif of Staff, 6th Div., Ft. Snelling, Minn.

Lieutenant Colonel John C. Mullinix, to GSC, Hq., 1st CA, Boston, Mass.

Lieutenant Colonel Cornelius M. Daly, prior orders revoked.

Lieutenant Colonel James N. Caperton, to Post Hq., Cav. Sch., Ft. Riley, Kan.

Lieutenant Colonel Cyrus J. Wilder, to Post Hq., Cav. Sch., Ft. Riley, Kan.

Major Darrow Menoher, 2d, to Post Hq., Cav. Sch., Ft. Riley, Kan.

Captain Edwin P. Crandall, to Post Hq., Cav. Sch., Ft. Riley, Kan.

Captain Virgil F. Shaw, to Post Hq., Cav. Sch., Ft. Riley, Kan.

Lieutenant Colonel Lucien S. S. Berry's prior orders amended to assign him to Post Hq., Cav. Sch., Ft. Riley, Kan.

Major Frank A. Allen, Jr., prior orders revoked; to office C. of S., Wash., D. C.

Major James B. Patterson, prior orders revoked.

Major Edward M. Fickett, 2d Cav., to Cav. Sch., Ft. Riley, Kan.

Captain Frank O. Dewey, 14th Cav., to Cav. Sch., Ft. Riley, Kan.

Major William H. W. Reinburg to Post Hq., Cav. Sch., Ft. Riley, Kan.

Major Marcellus L. Stockton, Jr., to Post Hq., Cav. Sch., Ft. Riley, Kan.

Major Harold E. Eastwood, to Cav. Sch., Ft. Riley, Kan.

Major John C. MacDonald, to Cav. Sch., Ft. Riley, Kan.

Major Vennard Wilson, to Cav. Sch., Ft. Riley, Kan.

Captain John L. Ballantyne to Cav. Sch., Ft. Riley, Kan.

Captain Logan C. Berry, to Cav. Sch., Ft. Riley, Kan.

Captain Robert L. Howze, Jr., to Cav. Sch., Ft. Riley, Kan.

Captain Paul MacK. Martin, to Cav. Sch., Ft. Riley, Kan.

Captain Donald H. Nelson, to Cav. Sch., Ft. Riley, Kan.

Captain C. W. A. Raguse, to Cav. Sch., Ft. Riley, Kan.

Captain Carl D. Silverthorne, to Cav. Sch., Ft. Riley, Kan.

Captain Lawrence G. Smith, to Cav. Sch., Ft. Riley, Kan.

Captain John H. Stodter, to Cav. Sch., Ft. Riley, Kan.

Captain Earl F. Thomson, to Cav. Sch., Ft. Riley, Kan.

Captain H. R. Westphalinger, to Cav. Sch., Ft. Riley, Kan.

Captain Isaac D. White, to Cav. Sch., Ft. Riley, Kan.

Captain W. W. Yale, to Cav. Sch., Ft. Riley, Kan.

First Lieutenant John W. Darrah, Jr., to Cav. Sch., Ft. Riley, Kan.

First Lieutenant Chas. G. Dodge, to Cav. Sch., Ft. Riley, Kan.

First Lieutenant James B. Corbett, to Cav. Sch., Ft. Riley, Kan.

First Lieutenant Wm. B. Fraser, to Cav. Sch., Ft. Riley, Kan.

Captain Thomas Robinson, to AGD, Hq., 7th CA, Omaha, Neb.

Captain Clark L. Ruffner, to Cav. Sch., Ft. Riley, Kan.

Captain Chas. C. W. Allen, to Norwich U., Northfield, Vt.

Captain Kenin O'Shea, prior orders amended; to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

Captain Geo. W. Busby, prior orders amended; to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

Following first lieutenants to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

James E. Glattly,

Loren B. Hillsinger.

Major General George Grunert, USA, to command Philippine Department.

Colonel William C. Christy, to IGD, Panama Canal Department.

Lieutenant Colonel Joseph L. Phillips, to off. of Asst. Sec. of War, Wash., D. C.

Lieutenant Colonel John A. Week, prior orders revoked, to GSC, Buenos Aires, Argentina.

Lieutenant Colonel Clyde Pickett, to Org. Res., 4th CA, Chattanooga, Tenn.

Major Harry M. Baird, prior orders amended, to GSC, Hq., 1st CA, Ft. Hays, Ohio.

Major James S. Rodwell, prior orders revoked, to GSC, Hq., 4th Div., Ft. Benning, Ga.

Captain John W. Wooford, to GSC, Hq., 5th Div., Ft. Benjamin Harrison, Ind.

Following officers to 7th Cav. Brig., Ft. Knox, Ky.:

Captain Prentice E. Yeomans.

First Lieutenant David V. Adamson.

Second Lieutenant Arthur T. Williams, 3d.

First Lieutenant Bruce Palmer, Jr., prior orders amended to Adv. Motors Course, Cav. Sch., Ft. Riley, Kan.

First Lieutenant Francis J. Murdoch, Jr., to Adv. Equitation Course, Cav. Sch., Ft. Riley, Kan.

Lieutenant Colonel Lawrence C. Frizzell, to Org. Res., 4th CA, Atlanta, Ga.

Major Francis P. Tompkins, prior orders revoked.

Major Ernest N. Harmon, prior orders revoked.

Major Francis P. Tompkins, to off. of the C. of Cav., Wash., D. C.

Captain Henry I. Hodes, prior orders revoked.

Captain Eric H. F. Svensson, Jr., to 2d Sig. Serv. Co., Wash., D. C.

Captain Grant A. Williams, prior orders revoked; to 7th Sign. Tr., Ft. Knox, Ky.

Captain Chas. P. Bixel, prior orders revoked; to 6th Cav., Ft. Oglethorpe, Ga.

Brigadier General Jonathan M. Wainwright, USA, to Philippine Dept.

Lieutenant Colonel Roy E. Blount, Post Hq., Cav. Sch., Ft. Riley, Kan.

Lieutenant Colonel Robert W. Grow, prior orders amended; to 7th Cav. Brig., Ft. Knox, Ky.

Major Wm. H. W. Reinburg, to Cav. Sch., Ft. Riley, Kan.

Major Chas. F. Houghton, prior orders amended, to 4th Cav., Ft. Meade, So. Dak.

Major Lucian K. Truscott, Jr., prior orders revoked; 1st Cav. Div., Ft. Clark, Texas.

Major John T. Cole, to 2d Cav., Ft. Riley, Kan.

Major Chas. H. Gerhardt, prior orders revoked.

Major Eugene A. Regnier, prior orders revoked.

Following majors, prior orders revoked: William L. Barriger and Thomas Q. Donaldson, Jr.

Major Harry C. Newshaw, prior orders revoked.

Major Rufus S. Ramey, to off. of the C. of S., Wash., D. C.

Major James T. Duke, prior orders revoked; to Org. Res., 3d CA, Wash., D. C.

Captain Chas. P. Bixel, prior orders revoked; to 6th Cav., Ft. Oglethorpe, Ga.

Captain Geo. W. Busby, to faculty, Cav. Sch., Ft. Riley, Kan.

Captain Hayden A. Sears, to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

Captain Edward J. Doyle, to 1st Cav. Div., Ft. Clark, Texas.

Captain Eugene L. Harrison, prior orders revoked.

Captain Gilman C. Mudgett, prior orders revoked.

Captain Harry W. Johnson, prior orders revoked.

Captain Hamilton H. Howze, to 3d Cav., Ft. Myer, Va.

Captain Henry I. Hodes, to off. of the C. of S., Wash., D. C.

Captain Joseph M. Williams, to 69th QM BN, Camp Ord, Cal.

First Lieutenant Loren B. Hillsinger, to 14th Cav., Ft. Riley, Kan.

First Lieutenant Ned T. Norris, to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

First Lieutenant Edward W. Williams, prior orders revoked.

First Lieutenant Cornelius A. Lichirie, to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant James D. Alger, prior orders revoked; to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant Ralph E. Haines, Jr., prior orders revoked; to 7th Cav. Brig., Ft. Knox, Ky.

Second Lieutenant Robert S. Demitz, to Combat Car Sqdn., Ft. Riley, Kan.

Major General John K. Herr, C. of Cav., det. as member of Decoration Bd., Wash., D. C.

Colonel Frederick D. Griffith, Jr., det. as member of Army Retiring Bd., Ft. Bliss, Tex.

Lieutenant Colonel Richard L. Creed, to 1st Cav. Div., Ft. Clark, Texas.

Major James Van V. Shufelt, to Hq., 4th CA, Atlanta, Ga.

Major Sexton Berg, det. as recorder, Army Retiring Bd., Ft. Bliss, Texas.

Major Richard E. Tallant, to IGD, 8th Div., Camp Jackson, S. C.

Major Marcellus L. Stockton, to IGD, 7th Div., Camp Ord, Calif.

Major Eugene A. Regnier, to Aide-de-camp to the Secretary of War.

Captain Clayton J. Mansfield, prior orders revoked, to Panama Canal Dept.

First Lieutenant Norman A. Loeb, prior orders amended, to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant Philip H. Bethune, prior orders revoked, to Panama Canal Dept.

First Lieutenant Harry W. Candler, to Panama Canal Dept.

Following first lieutenants, prior orders revoked: James F. Rhoades and Charles P. Walker.

Following first lieutenants, prior orders revoked: Creighton W. Abrams, Jr., Thomas W. Chandler, Edward C. Dunn, Frederick H. Gaston, Jr., McPherson LeMoyne, Robert E. McCabe, Robert E. O'Brien, Jr., Francis McD. Oliver, Jr., Robert J. Quinn, Jr., Leonard C. Shea, Edward C. D. Scherrer, Alexander D. Surles, Jr., Arthur H. Wilson, Jr.

Following first lieutenants, prior orders revoked: Donald P. Christensen, Russell V. D. Janzan, and Carl LaV. Rickenbaugh.

First Lieutenant William R. Prince, prior orders amended, to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant Hilwert S. Streeter, prior orders amended, to Combat Car Sqdn., Cav. Sch., Ft. Riley, Kan.

First Lieutenant Edward W. Williams, to 7th Cav. Brig., Ft. Knox, Ky.

Following second lieutenants, to station indicated: Ft. Clark, Texas—Montgomery C. Meigs, Dennis L. Barton, James H. Pittman, Gilbert H. Woodward, George C. Hines, Scott M. Case.

Following second lieutenants, to 7th Cav. Brig., Ft. Knox, Ky: James F. Williams, Jr., and Edward D. Lucas, Jr.

Following named second lieutenants, to station indicated: 3d Cav., Ft. Ethan Allen, Vt.—Milford F. Stablein, James F. Kreitzer.

12th Cav., Ft. Brown Texas—Ralph M. Rogers, John P. Gerald, Thomas B. Hargis, Jr.

6th Cav., Ft. Oglethorpe, Ga.—Dean T. Vanderhoef, James E. Tyler, Samuel McC. Goodwin, Rush S. Wells, Jr.

2d Cav., Ft. Riley, Kan.—Robert J. Fate.

11th Cav., Pres. of Monterey, Calif.—James L. Smiley, Herbert M. Bowlby, Jr., Thomas C. Chamberlain, Wallace L. Clement.

3d Cav., Ft. Myer, Va.—Robert R. Dodderidge.

12th Cav., Ft. Ringgold, Texas—Joseph L. McCroskey.

Colonel George S. Patton, Jr., to 2d Armored Div., Ft. Benning, Ga.

Lieutenant Colonel Carl H. Strong, to Military Attaché, Bogota, Columbia.

Lieutenant Colonel Clyde Pickett, prior orders amended, to Org. Res., 6th CA, Detroit, Mich.

Lieutenant Colonel Bertrand Morrow, to 2d Cav., Ft. Riley, Kan.

Lieutenant Colonel John W. McDonald, to AWC, Wash., D. C.

Lieutenant Colonel Robert W. Grow, to GSC, Hq., 2d Armored Div., Ft. Benning, Ga.

Lieutenant Colonel Ernest N. Harmon, to Hq., I Armored Corps, Ft. Knox, Ky.

Following officers for org. indicated, to GSC, Hq., I Armored Div., Ft. Knox, Ky.: Lieutenant Colonel Cornelius M. Daly, 13th Cav., and Major William L. Barriger, 1st Cav.

Lieutenant Colonel Willis D. Crittenberger, to GSC Hq., I Armored Div., Ft. Knox, Ky.

Lieutenant Colonel John D. Hood, to Org. Res., 2d CA, New York, N. Y.

Lieutenant Colonel Nelson M. Imboden, to IGD, I Armored Div., Ft. Knox, Ky.

Major Charles H. Unger, GSC, I Armored Corps, Ft. Knox, Ky.

Major Alexander B. MacNabb, to Instr., Cav., Pa. NG, Tyrone, Pa.

Major Oscar W. Koch, to IGD, 2d Armored Div., Ft. Benning, Ga.

Major James B. Patterson, to home, to await retirement.

Major Joseph K. Baker, to Military Attaché, Athens, Greece.

Captain Powhatan M. Morton, to 1st Cav. Div., Ft. Bliss, Texas.

Captain Augustus D. Dugan, to 1st Cav. Div., Ft. Bliss, Texas.

First Lieutenant William V. Martz, prior orders revoked, to 7th Cav. Brig., Ft. Knox, Ky.

First Lieutenant Harry W. Candler, prior orders revoked.

First Lieutenant Jules V. Richardson, to Panama Canal Dept.

First Lieutenant Benjamin W. Heckemeyer, to Harvard University, Cambridge, Mass.

Second Lieutenant Neil D. Van Sickle, to AC Primary Flying School, Randolph Field, Texas.

Colonel D. D. Tompkins' orders amended to relieve him Jacksonville, Fla.

Lieutenant Colonel C. C. Benson, relieved C. C. C., Fort Benj. Harrison; assigned armored force, Fort Knox.

Major G. X. Cheves, detailed as member of G.S.C.; assigned G.S. with troops and headquarters, armored force, Washington, D. C.; relieved office, C. of Cav.

Major C. J. Dockler, detailed as member of G. S. C.; assigned G. S. with troops, and headquarters, 9th Div., Fort Bragg; relieved staff, C. A. School, Fort Monroe.

Major M. A. Fennel, relieved 4th Cav., Fort Meade, S. Dak., August 1; assigned recruiting duty, overseas recruiting depot, Fort Slocum.

Major J. V. Cagne's orders relieving him Fort Knox and detailing him Michigan State College, East Lansing, revoked.

Major G. B. Guenther, relieved 11th Cav., Presidio of Monterey, August 15; assigned post headquarters, Cavalry School, Fort Riley.

Major E. L. Harrison, relieved U. S. M. A., August 15; assigned Washington Provisional Brigade, Washington, D. C.

Major G. B. Hudson's orders relieving him Fort Knox and detailing him Univ. of Arizona, Tuscon, revoked.

Major J. B. Reybold, relieved 2d Cav., Fort Riley, August 10; detailed O. R., 1st C. A., New Haven.

Major T. T. Thornburgh, relieved Q. M. School, Philadelphia, August 1; assigned staff, Cavalry School, Fort Riley.

Major I. D. White, relieved as instructor, Cavalry School, Fort Riley; assigned 2d armored division, Fort Benning.

Captain C. C. W. Allan's orders relieving him Fort Meade, S. Dak., and detailing him Norwich Univ., Northfield, Vt., revoked.

The following relieved as indicated, August 10: assigned 1st armored division, Fort Knox: Captain J. L. DePew, First Lieutenant C. W. Abrams, Jr., and Second Lieutenant W. S. Gray, 1st Cav. Div., Fort Bliss; Captain Whitside Miller, 2d Cav., Fort Riley; First Lieutenant R. E. McCabe and Second Lieutenant W. A. Sussmann, 3d Cav., Fort Ethan Allen; First Lieutenant A. D. Surles, Jr., 12th Cav., Fort Brown; and Second Lieutenant G. M. McHaney, 6th Cav., Fort Oglethorpe.

Captain J. A. Michela, relieved 2d Cav. Brig., Fort Bliss; assigned Moscow, U. S. S. R., as assistant military attaché, sailing from San Francisco for New York, August 20 and to report for temporary duty in office, A. C. of S., G-2, Washington, D. C.

Captain J. O'D. Murtaughs orders relieving him Fort Oglethorpe and detailing him Univ. of Illinois, Champaign, revoked.

Captain W. J. Reardon, relieved 1st Cav. Div., Fort Bliss; assigned U. S. M. A.

Captain C. H. Valentine, relieved 1st Cav. Div., Fort Bliss, August 1; assigned Cav. Bd., Fort Riley.

The following relieved as indicated, August 10; assigned 4th Cavalry, Fort Meade, S. Dak.: First Lieutenant R. E. O'Brien, Jr., 1st Cav. Division, Fort Bliss; First Lieutenant F. McD. Oliver, Jr., 6th Cav., Fort Oglethorpe, and Second Lieutenant T. B. Harrington, 3d Cav., Fort Ethan Allen.

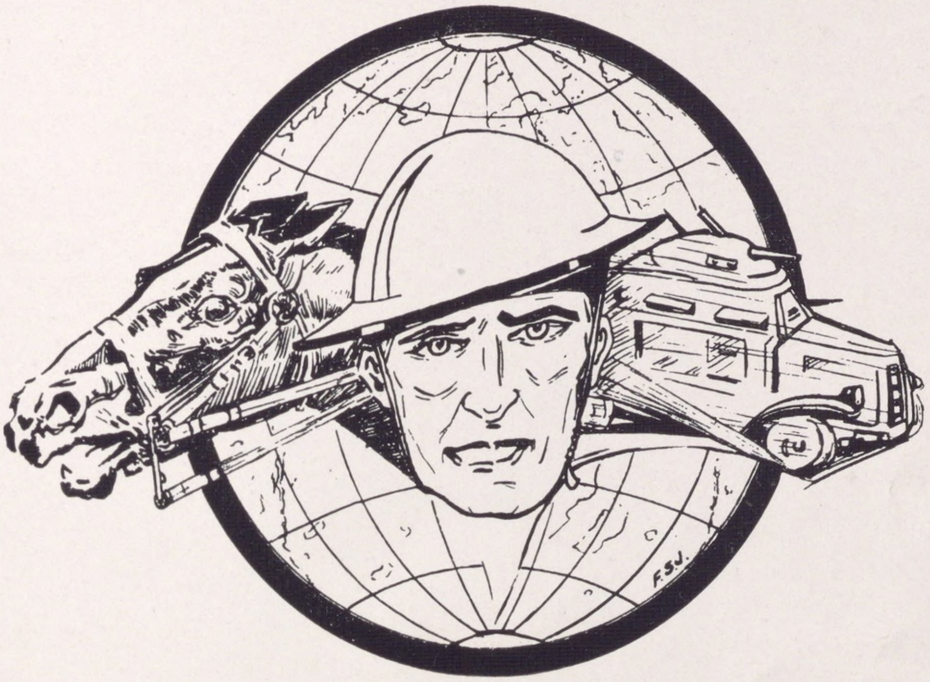
Second Lieutenant C. W. Walson, relieved 11th Cav., Presidio of Monterey; assigned 1st armored division, Fort Knox, sailing from San Francisco for New York, August 20.

* * * *

"WHERE ARE OUR CAVALRY FRIENDS, NOW?"

. . . . Read the Next Issue of the Cavalry Journal

CAVALRY COMBAT



". . . a virile volume, full of information, battlefield experience, and tactical instruction."

". . . of vital interest to officers of all branches and components of the army."

* * *

Read: pages 345 to 356—Aviation in cooperation with cavalry—a World War historical example which clearly indicates the tactics employed by the present catchphrase, "Blitzkrieg."

Read: pages 315 to 325; and 497 to 505—The World War development of cavalry mechanization resulting in the production of the light fast tank and its cavalry counterpart, the combat car.

The fundamental characteristics and *principles* of cavalry employment throughout the ages have not changed. *Methods* of cavalry employment, with greatly increased fire power and mobility resulting from modern invention and organization, are undergoing constant improvement with the resultant objective of maintaining the established position of cavalry as a *fighting element superior in battlefield mobility to that of infantry.*

American cavalry has increased its mobility off and on the battlefield by the adoption of *motorization and mechanization.*

Write today for your copy of this volume of historical reference. Limited supply available.

Over 500 pages with illustrations. • *Price $2.50*

United States Cavalry Association

1624 H St., N.W., Washington, D.C.

Attention!

Instructors of Cavalry R.O.T.C. Units

The CAVALRY JOURNAL, as in the past, will again handle your R.O.T.C. texts. The revisions for 1940-1941 were made by officers of the Regular Army, experts in the respective subjects.

Both the Basic and Advanced Cavalry Manuals for 1940-1941 devote considerably more space to *mechanized units* than the previous editions. They have been designated so that the four volumes completely and thoroughly cover the War Department training program and eliminate the necessity of numerous pamphlets and supplementary matter. Copious illustrations and diagrams illustrate the subject matter. These volumes are essential, not alone to the college student but to supplement an officer's professional library.

THE R.O.T.C. MANUAL, CAVALRY, BASIC COURSE (Volumes I and II combined) $3.50
(Volume I, Individually bound, $2.50— Volume II, Individually bound, $1.75)

THE R.O.T.C. MANUAL, ADVANCED COURSE (Volumes III and IV combined) 5.00
(Volume III, Individually bound, $3.25— Volume IV, Individually bound, $2.75)

THE R.O.T.C. MANUALS FOR ESSENTIALLY MILITARY SCHOOLS, Basic Volume (First and Second Years), full buckram 1.50
(Paper binding, $1.25)

ADVANCED VOLUME (Third and Fourth Years), full buckram 2.50

THE JUNIOR R.O.T.C. MANUAL, A Complete Text for High School Students, full buckram 1.25
(Paper binding, $1.00)

TERMS: For the R.O.T.C. on orders of ten or more copies all prices are subject to a discount of 20%, F.O.B., Harrisburg, Penna. or Washington, D. C.

For Prompt and Personal Attention

Order Through

THE CAVALRY JOURNAL

1624 H Street, N.W. WASHINGTON, D. C.